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meccano magazine

November

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the practical boy's hobbies magazine

1965

IN THIS ISSUE

- The Sinking of the Graf Spee
- Choosing and using flexible Track
- Motorising plastic model aircraft

✹Now a special clockwork/pushalong train set for the very young - PERCY THE SMALL ENGINE

The Rev. W. Awdry's lovable character brought to life by **MECCANO** ®

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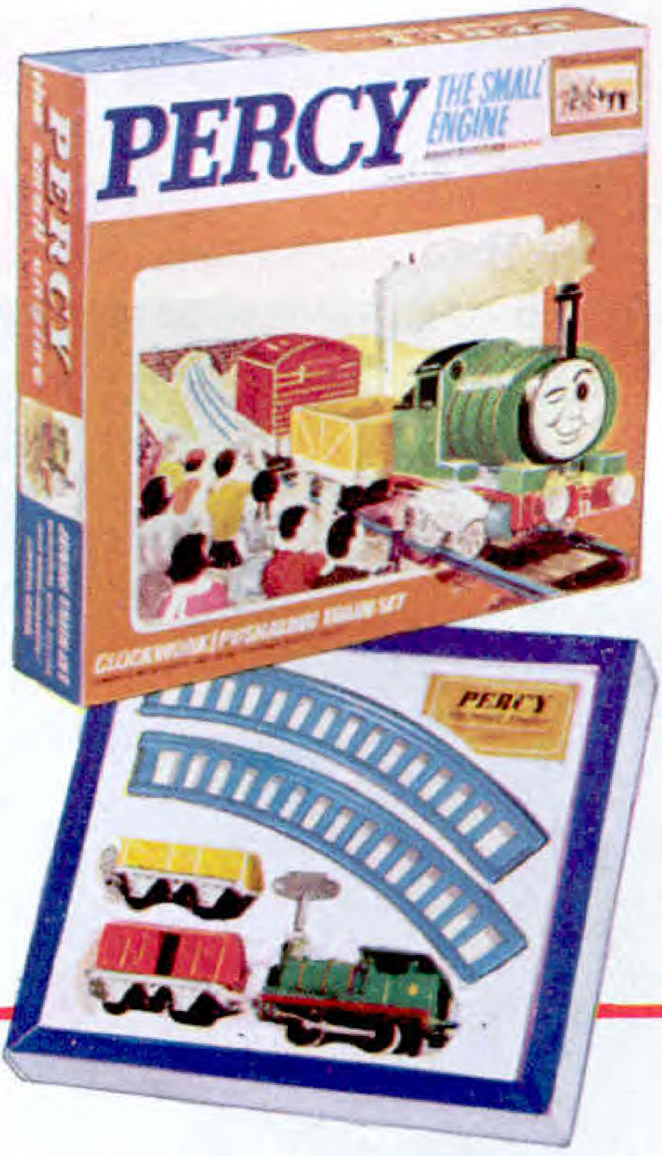
* Percy himself (large as life!) with a new long-running clockwork motor that can be free-wheeled backward and forward without damage.

* Open Goods Truck and Closed Goods Wagon with sliding doors.

* A brand new idea—rails simply click together, and are specially designed to make it easy to put Percy on the track. Track is 36" in diameter, and includes a brake device to stop the train automatically.

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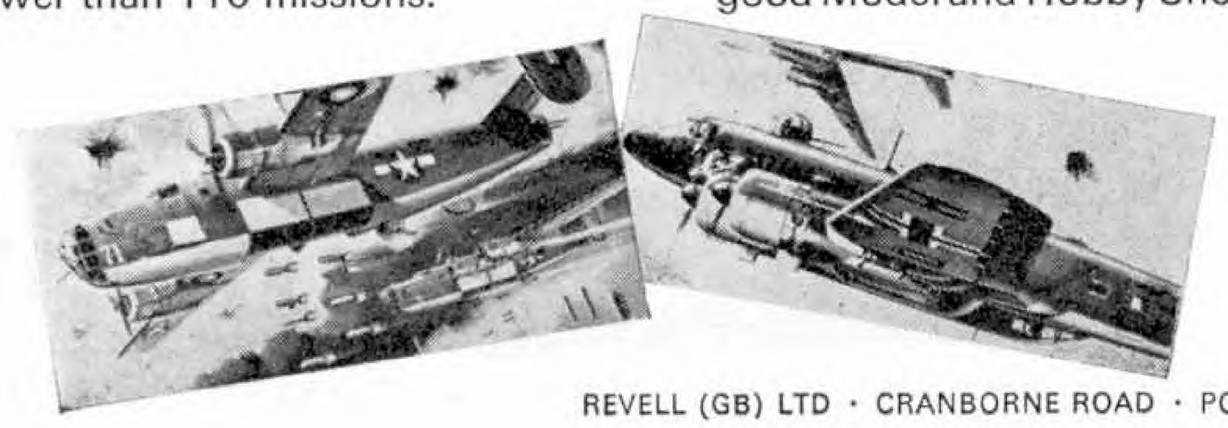
Avro Lancaster Superbly detailed kit producing an accurate replica of the plane that featured in one of the most exciting events of World War II. An authentic version of Guy Gibson's plane 'G' for George which led the famous 'Dam Buster' attack on the Moehne dam.

Liberator B-24D Revell base their prize kit of this versatile heavy bomber on the famous 'Blue Streak' which flew no fewer than 110 missions.

Focke-Wulf FW200 Condor Scourge of the North Atlantic convoys. An expertly detailed kit making a brilliant model of this famous long-range German bomber.

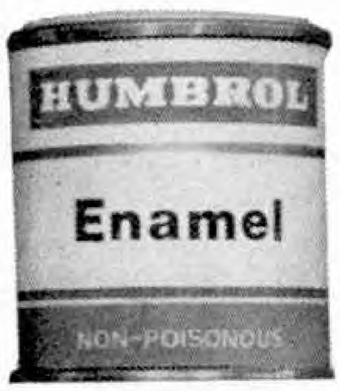
Get all three. They make a superb set, and they're all true 1/72nd scale. Features include many movable parts. Price – 12/6 each. From all good Model and Hobby Shops.

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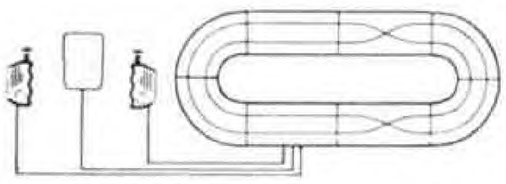


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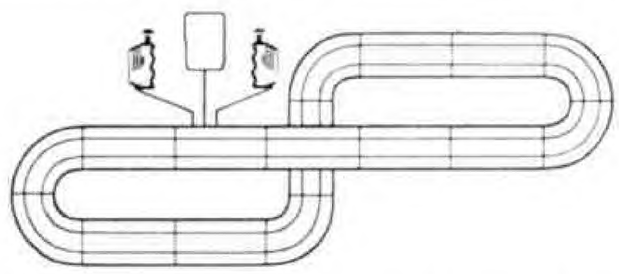


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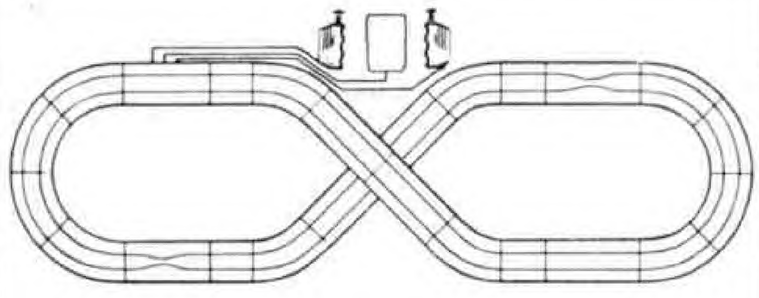
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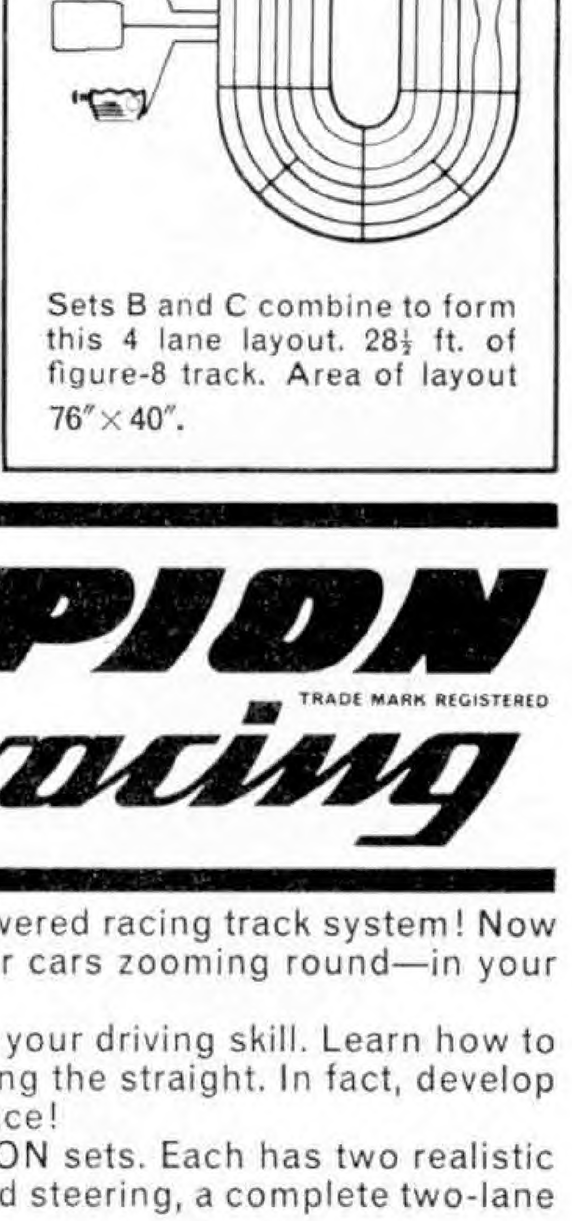
X.100 Set A. 79/11 6 ft. of track using small radius (Inner) curves and two cross-overs. Area of layout—36" x 15".



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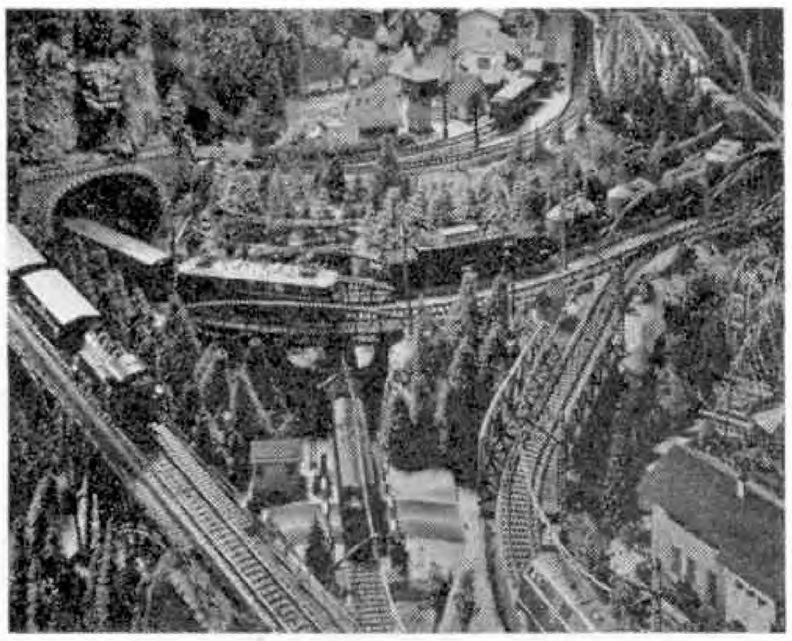
meccano magazine

the practical boy's

hobbies magazine

November 1965 · Vol. 50 · No. 11 · Monthly

AEROMODELLING □ RADIO □ ELECTRONICS □ CAMPING □ CYCLING □ STAMPS □ FISHING



Front Cover

The busy scene on this month's cover emphasises the picturesque nature of Continental railways. This illustration is featured by kind permission of Gerbruder Märklin & Cie., Göppingen, whose products were used to create the original layout.

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Next Month. John Taylor relates the fascinating story of the great airship R-100 and our plastic kit feature shows you how to build a model of this famous pioneer from the brand new Frog kit. Don't miss it!

Ordering the Meccano Magazine Overseas Readers overseas can order the Meccano Magazine from Meccano dealers or direct from the publishers, or from the publishers' offices listed above. The subscription rate for 12 months is the equivalent of 20s. sterling at the current rate of exchange, U.S.A. and Canada **$3.00.**

On leafing through this issue, you will find one or two minor changes which, I think, are worthy of further comment here.

First of all, Digger Ames fans will be disappointed that he does not appear this month, but I think you will find the story 'The Hunting of the Hunter' on page 18 every bit as exciting— particularly when you consider that all the action is true to life; it really DID happen just as it is described! There will be another true life action story next month, but in the meantime why not write and tell me what you thought of 'The Hunting of the Hunter'.

Have you seen 'Have You Seen?' on page 6? This will be a regular feature from now on, and in it each month, we will take a look at some of the new and recent products in which I think you will be interested. Wherever possible, the illustrations in this section will be specially prepared and not manufacturers' "hand-out" photographs. You may also like to know that everything mentioned in 'Have You Seen?' will have been carefully examined by our editorial staff, and any opinions expressed will be entirely unbiased.

Last month, I mentioned the forthcoming inclusion of more plastic kit constructional features. Motorising the Revell Zero on page 12 is the first of these. We took our original motorised Zero along to our stand at the recent National Models Show where it aroused so much attention with its spinning prop that I am sure you are going to enjoy these 'plastic pages'.

In addition to these new items you will, of course, still find the regular articles that you look forward to each month. Mike Rickett contributes the second part of his special 3-part railway modelling series, this month dealing with the possibilities and problems associated with the use of flexible track—a subject that regularly crops up in our day-to-day correspondence.

The Editor

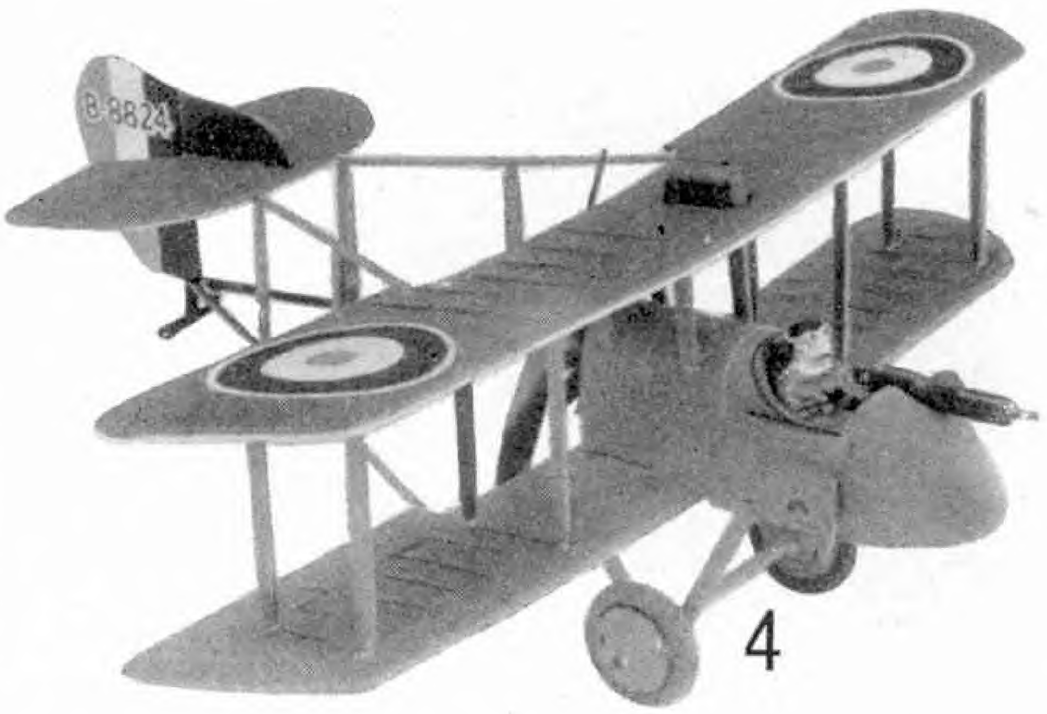


Special offer coupon for visitors to National Model Show.

HAVE YOU SEEN?



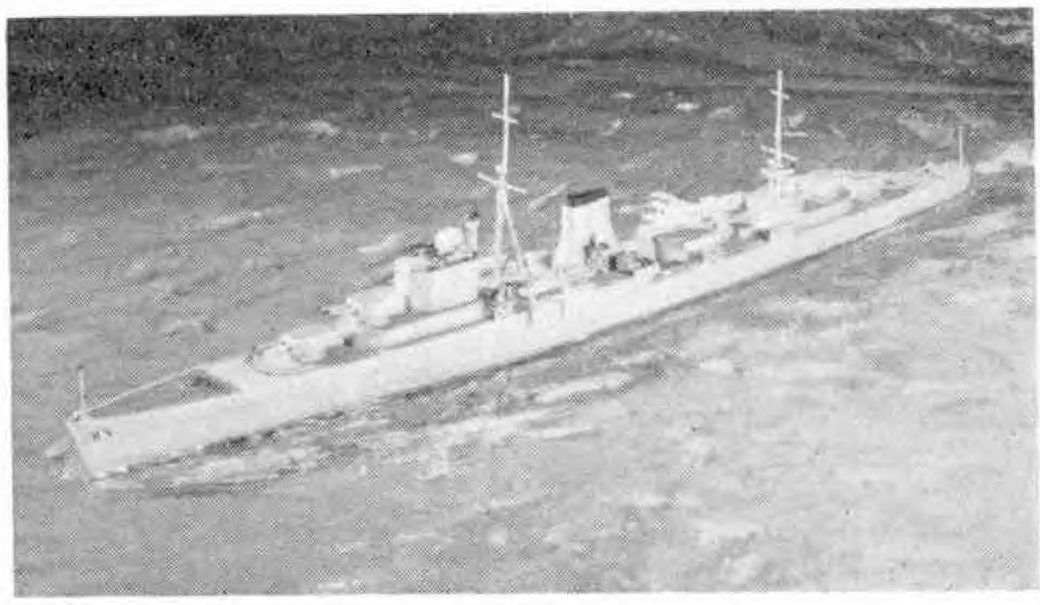
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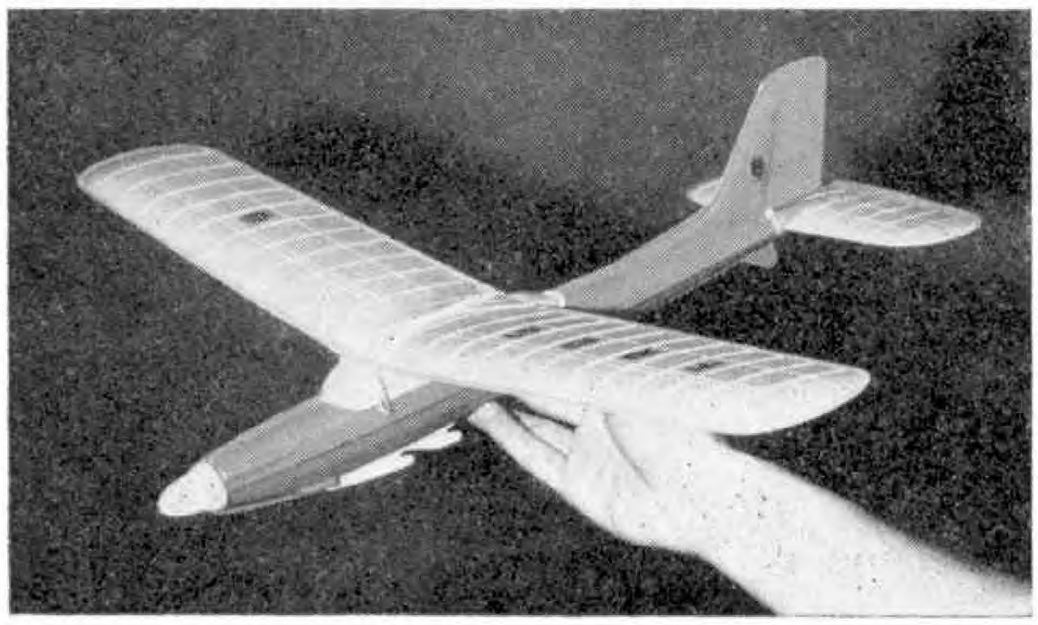
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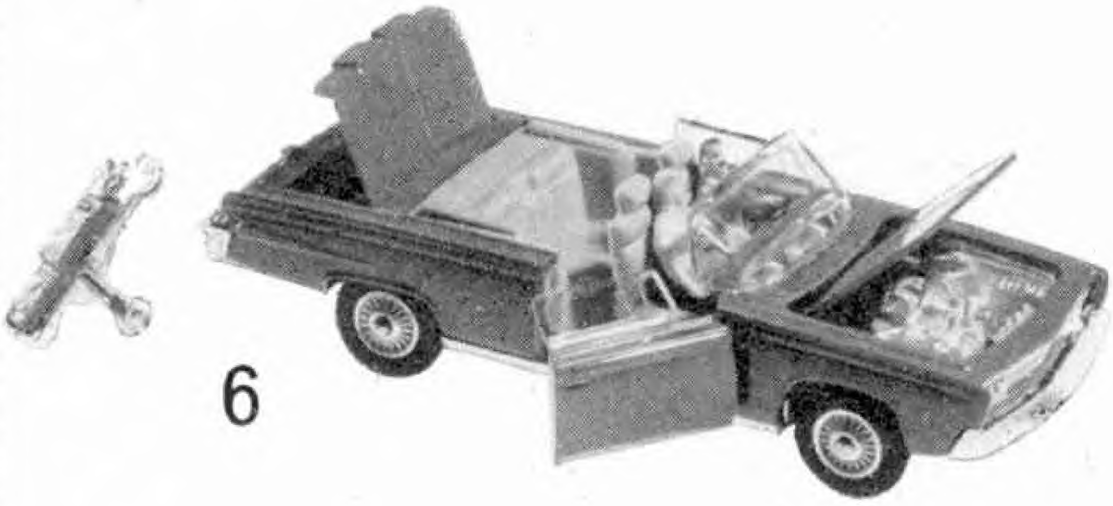
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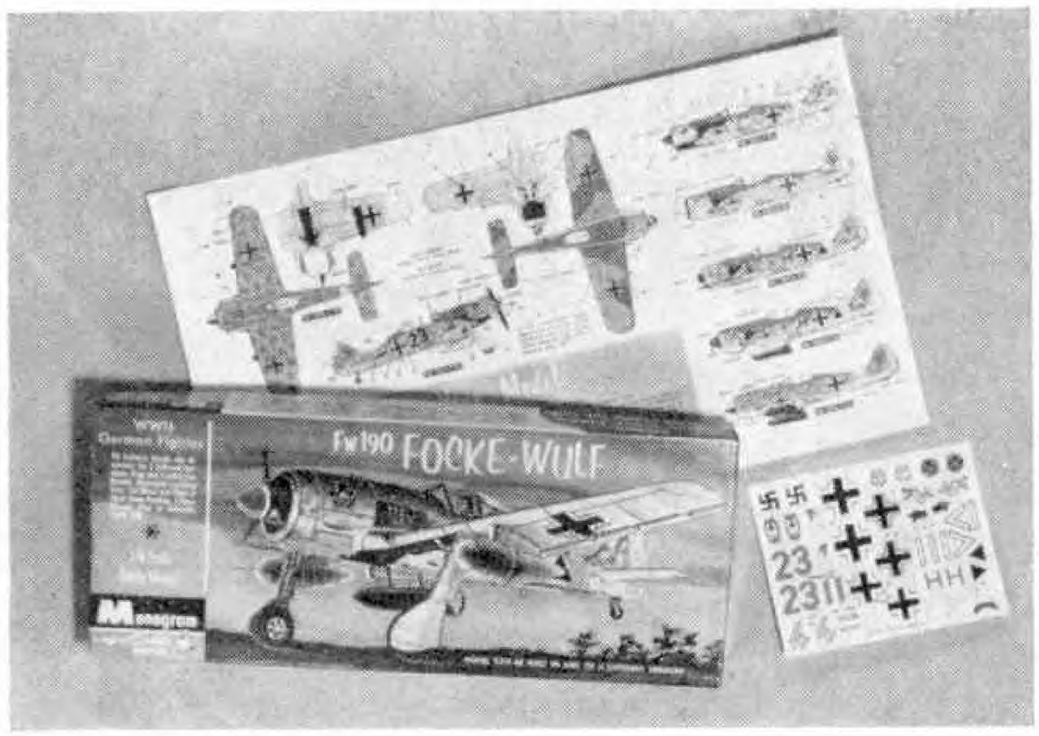
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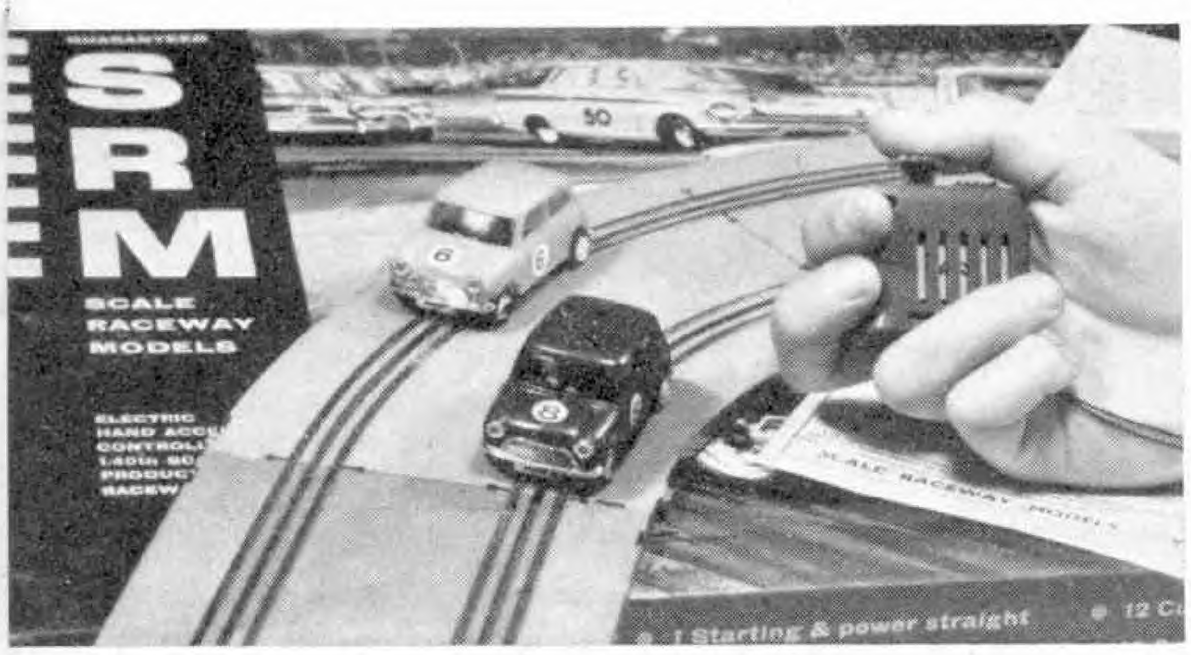
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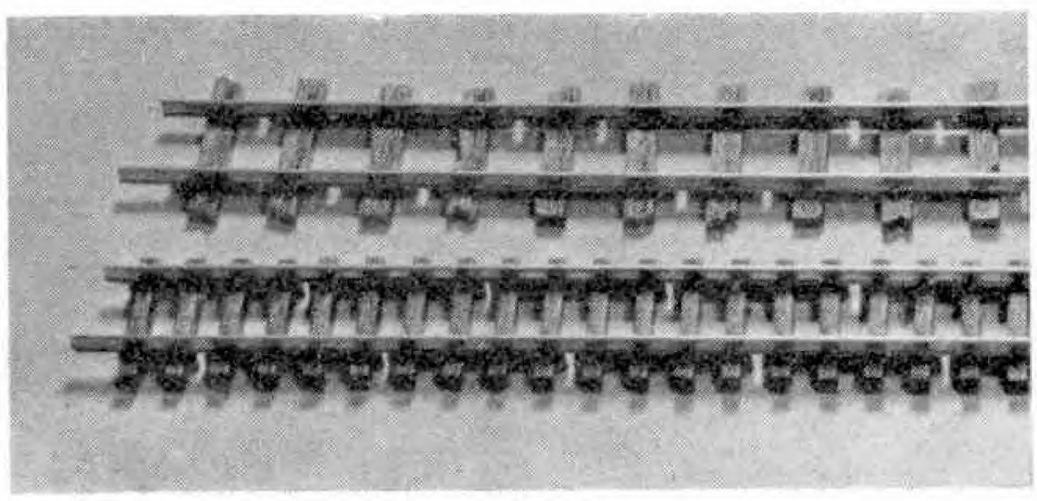


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1 'Beasties, Ghosties and things that go bump in the night' are the ghoulish subjects for the latest plastic kit craze. MONOGRAM, REVELL and AURORA each have a range of plastic monsters that give lots of scope for imaginative paint schemes—and they're not *really* horrible—quite friendly in fact, as you may judge from our heading photo. This shows Monogram's Fred Flypogger as 'Speed Shift'. Average height of these lovelies is 5 inches. The Revell series cost **14s.** each. The Aurora Monsters cost **12s. 6d.** The Monogram Happy Monsters series are **13s. 6d.** each.

2 Painting fellows like these calls for ghastly colours—HUMBROL have obliged with a box of Monster Colours—Examples:—Devil Red, Vampire Purple, Slimy Green, Witch Black! The set costs **22s. 2d.** Another special Humbrol paint pack is the useful set of six authentic matt camouflage colours. The individual phials are packed in a plastic tray which doubles very efficiently as a mixing palate too! Indispensable for those military models—**2s. 6d.**

3 The FROG 'Bat' is a really practical ready-to-fly glider. It is *completely* finished and when you unpack it from its colourful box all you have to do is fix the wing and tail in place with the rubber bands provided. The model is just about as crashproof as it is possible to make it, and we can guarantee a SUPER performance—no noise either! The Bat is full 25 inches wingspan and costs **25s. 6d.**

4 REVELL seem to have just about cornered the market with their fine series of 1/72 models of World War I fighters and the latest three kits are well up to standard. Most original choice is the de Havilland D.H.2, the other two (easier to build) being the French Morane Saulnier 'N' and a German Fokker Eindecker. Price is only **2s.** each and each box is topped with an action-packed full colour painting well worthy of preserving. To be *really* authentic, the roundels on the top wing of the D.H.2 should be encircled by a narrow white line as shown in our photo. We did this, *after the transfer was quite dry*, with ink compasses charged with white enamel—try it out on a piece of paper first.

5 One of the ships in our exciting story 'The Hunting of the Hunter' on page 18 is H.M.S. AJAX. The latest AIRFIX 1/600th scale ship kit faithfully reproduces this famous vessel and costs **4s. 6d.**

6 Every new die cast car seems to have yet another gadget fitted! CORGI's latest Chrysler Imperial is no exception. V.8 engine under the opening bonnet, opening doors, tipping seat, driver and passenger, wheel trims, chromed parts and inside the opening boot—a set of golf clubs and trolley! Nice crisp castings and smooth paint job complete the picture—price **8s. 11d.**

7 The 1/48th scale MONOGRAM aircraft kits are deservedly famous for their high standard of engineering and prototype accuracy. Latest is an impressive Focke Wulf 190—perhaps the most famous World War 2 German Fighter. You can build this one in any of five different versions (see photo) and there's a really super sheet of colourful transfers. Price **13s. 6d.**

8 Minis are not often seen on model slot race tracks but SRM have chosen these nippy little cars as prototypes for their new raceways 'B' set. The cars are 1/40th scale and beautifully constructed, complete with front wheel steering too! The set consists of figure 8 track complete with plastic bridge supports, crash barriers and hand controllers. The magnificent big Michael Turner painting on the box top—uncluttered by overprinting—is ideal for framing too! Price is **£5 19s. 6d.** If you already own an SRM 'A' set, the larger radius track sections of this new 'B' set are designed to 'mate' with them to form a complete 4 lane circuit—good idea!

9 Super detailed car kits are really catching on. Not only are the latest models correct externally but they are detailed right down to the chassis. Most include transmission, opening doors, treaded rubber tyres, chrome parts and engraved instruments on the dash! The majority of manufacturers have adopted 1/25th as a common scale and your prototype choice is very wide. Latest 'MONOGRAM Classic' car is the 1931 Rolls-Royce Phantom Henley Convertible, complete with opening dickie seat! Price **39s. 11d.** At the other end of the time scale is the new AIRFIX '65 Corvette Sting Ray which can be assembled in three different versions—roadracer, dragster or sportster. Nice gimmick is the open parachute brake for the dragster! This is the first of a new series and it costs **12s. 6d.**

10 (Top) The first 9 mm N/G track to arrive on the market is a worthy addition to the PECO Streamline range of points and flexible track. Available in eighteen inch lengths, it is ready-flexible down to radii as small as 4 in. Points are not at present available. Manufactured by the Pritchard Patent Product Co. Ltd., Pecoway, Seaton, Devon. Price **3s. 9d.** per eighteen inch length.

(Bottom) The first ready-flexible N gauge track for this increasingly popular scale, like the 00/9 track described above, is produced by PECO with a plastic sleeper base with simulated plastic chairs holding the 2 mm high nickel silver flat bottom rail in position. At the time of writing no points are available. Price **5s. 6d.** per yard.

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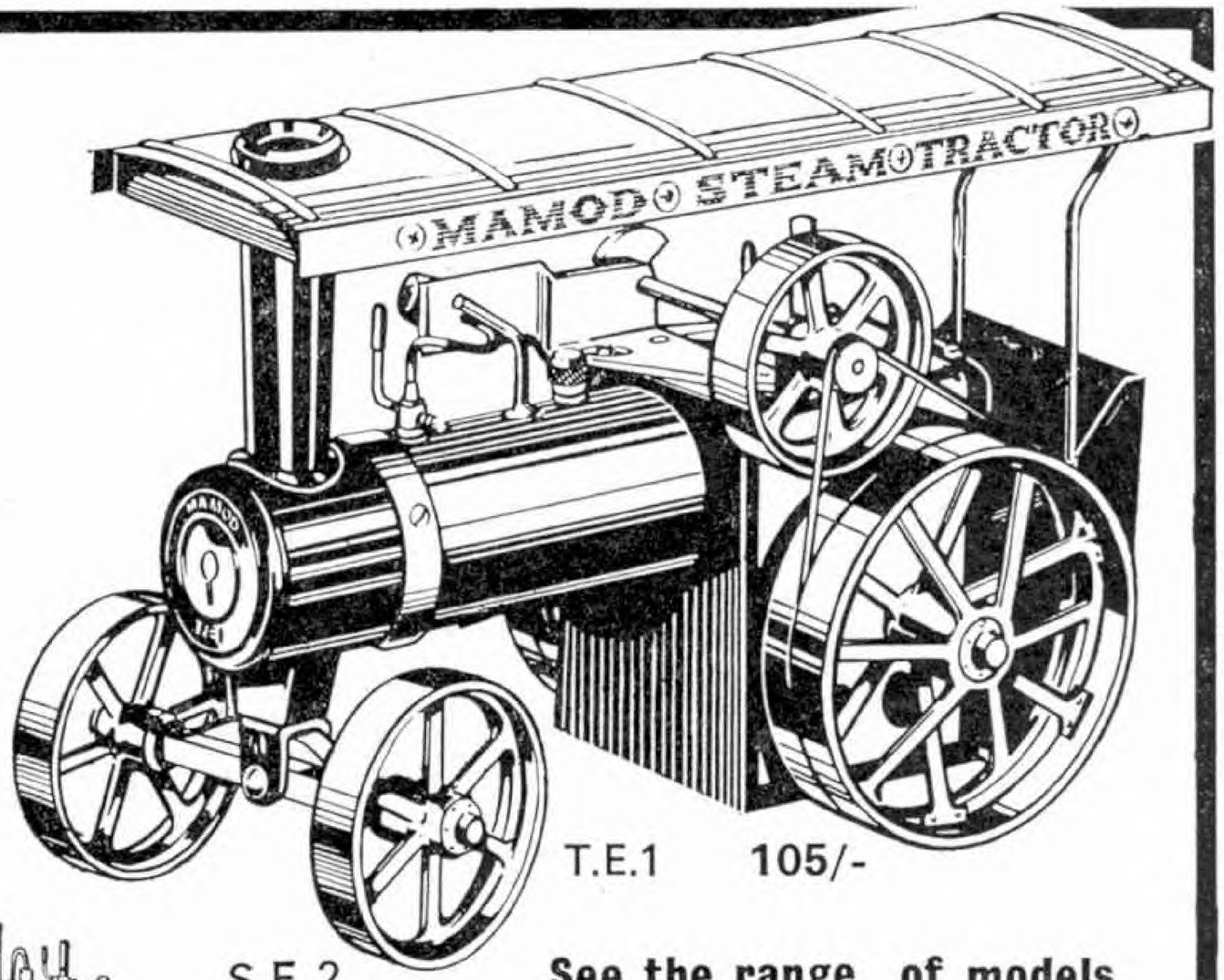
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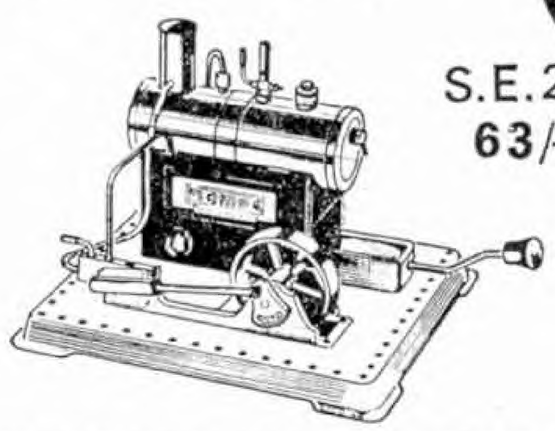
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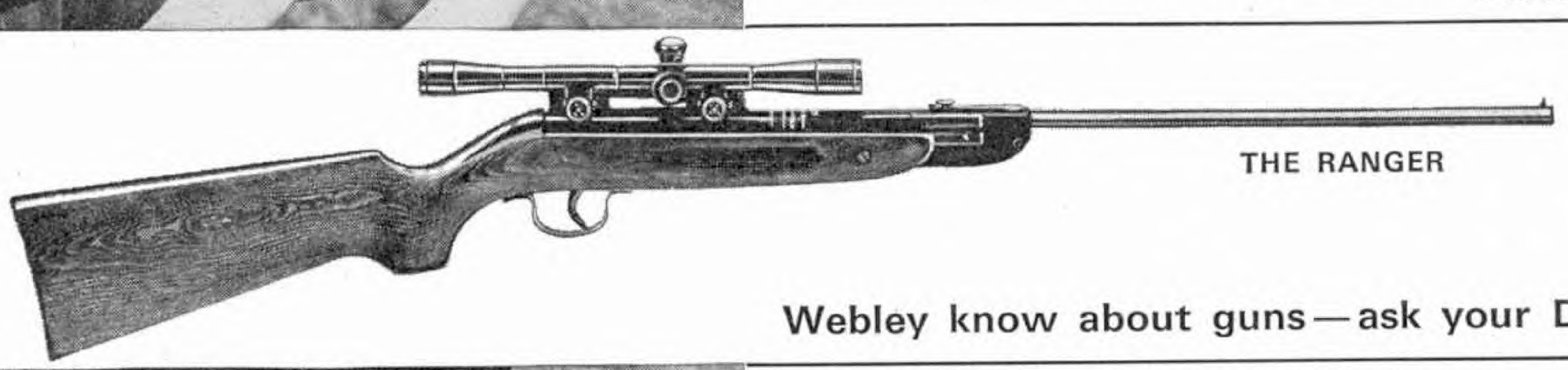


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BACK FROM THE JUNGLE

the re-birth of a Japanese 'Zero'

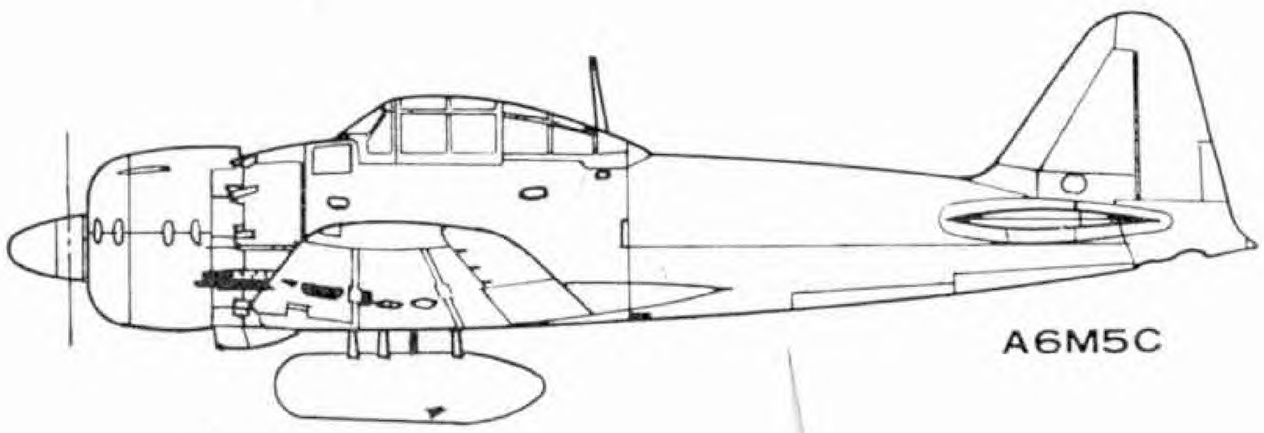
TWENTY-FIVE years ago this month, the Battle of Britain was over. R.A.F. Fighter Command had won a great victory in the skies over Southern England, at high cost in men and aircraft. The Air Ministry hoped to re-equip some of the battered squadrons with the 170 Brewster Buffalo fighters that had been ordered in America, but flight trials by No. 71 Squadron soon showed that these tubby little aircraft were no match for the Messerschmitts against which they would have to fight in Europe. The Buffalos were, therefore, diverted to the Far East, to equip the squadrons defending Singapore.

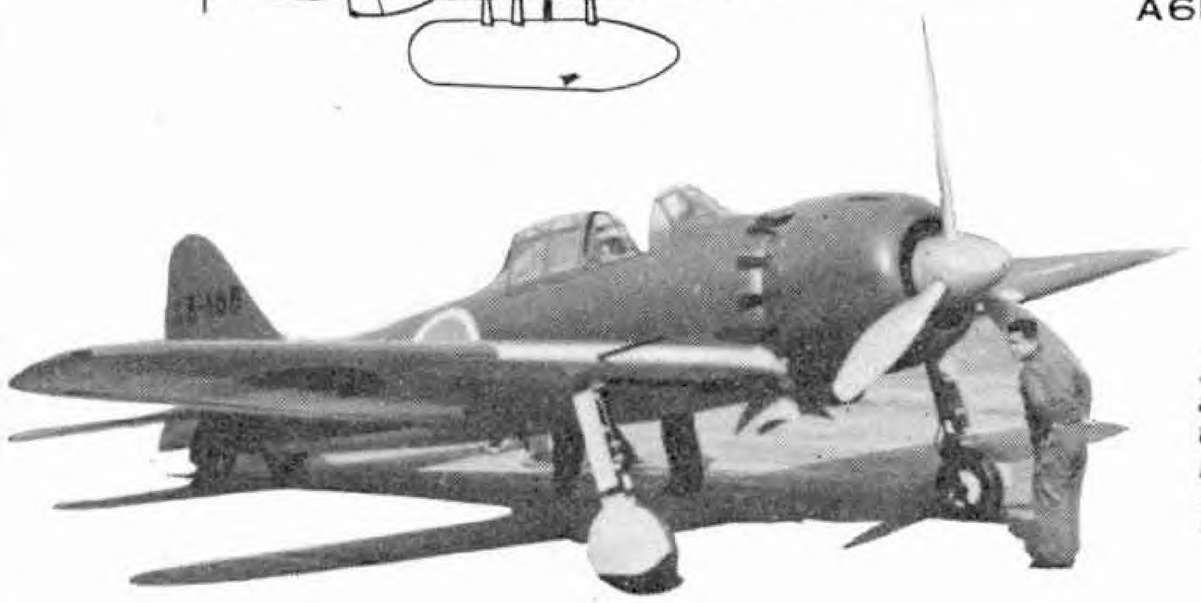
The pilots were told that the Buffalos were faster and better than any Japanese fighters, none of which were thought capable of reaching a height of 20,000 feet. They based their combat tactics on this belief and the results were disastrous. When the war spread to the Pacific in December 1941, the British squadrons found themselves in action against a fighter 'plane that was far superior to the Buffalo or any other fighter in that part of the world, and many of them died. The Japanese fighter that came as such a surprise was the Zero.

What makes the story all the more tragic is that the qualities of the Zero need have surprised no-one. The Japanese had used it in action against the Chinese as early as the Summer of 1940. American newspapermen in Chungking had described its capabilities and further details reached the Air Ministry from other sources in that city. Three months before the start of the Pacific war, this information was sent to the Far East, to warn Air Headquarters of the kind of enemy it might have to fight; but it never arrived. A detailed description of the Zero, written in Chinese, did reach Singapore in July 1941 and was translated. After that, apparently, it went into the pile of papers awaiting study by the R.A.F.'s makeshift intelligence section and was never read.

The early successes of the Zero earned it considerable respect among the allied air forces. Much of its reputation was well-deserved, but it had several weaknesses which the Japanese managed to hide successfully for many months. Then, on June 3, 1942, Flight Petty Officer Tadayoshi Koga ran out of luck after an attack on Dutch Harbour in the Aleutian Islands. Two bullets had holed his fuel system and it was clear that he would not be able to fly back to the aircraft carrier *Ryujo* from which he had taken off. He radioed to his flight commander that he intended to make for the island of Aktan, which had been chosen as an emergency landing field. It was there that an American reconnaissance party found him five weeks later—still in the cockpit of his Zero, upside down in a marsh, with a broken neck.







Left: this is the aeroplane shown at the foot of the facing page after being beautifully restored to showroom condition



On floats, the Zero was known as the A6M2N. It was extremely useful for the Pacific war because it did not have to rely on vulnerable airstrips or aircraft-carriers

The Zero itself was hardly damaged, and the Americans lost no time in shipping it back to the United States. After repair and detailed examination of its structure, it was test flown extensively to discover its true performance and capabilities in mock combat with American fighters. From that moment, the myth of the Zero's invincibility disappeared, although it remained an aircraft to be treated with respect throughout the war.

It was to the Japanese people what the Spitfire was to the British, and a total of 10,938 were built, including 844 floatplanes and two-seat trainers.

The story of the Zero began on October 5, 1937, when the Japanese Navy invited the Mitsubishi and Nakajima companies to design a replacement for the Mitsubishi A5M carrier-based fighter. With its open cockpit and fixed spatted undercarriage, the A5M had a top speed of only 273 m.p.h. and was armed with only two machine-guns. For its successor the Navy wanted a speed of 310 m.p.h., the ability to climb to 10,000 feet in 3½ minutes, and an armament of two 20 mm. cannon and two machine-guns, combined with unexcelled manoeuvrability and range.

The secret—lightness

Nakajima did not bother even to try to meet such demands; but Mitsubishi's chief designer, Jiro Horikoshi, decided to have a go. The best available engine was the Mitsubishi MK2 Zuisei 13 fourteen cylinder two-row radial, developing 780 h.p. To ensure good performance and manoeuvrability with such low power, Horikoshi had to go to great lengths to keep down the weight of his new aircraft. The forward part of the fuselage and the wing were made in one piece, which complicated manufacture and made maintenance and repair a nightmare. Later in the war, the self-sealing fuel tanks and armour protection for the pilot were removed, and lightening holes were drilled all over the place —even in the pilot's seat —to save weight, making the aircraft very vulnerable. Nevertheless, when the prototype flew on April 1, 1939, it was a remarkable aircraft for its time.

The first two prototypes, designated A6M1, were followed by a third with the new 925 h.p. Nakajima NK1C Sakae 12 engine. The added power enabled the aircraft to exceed easily the Japanese Navy requirements which had seemed so unreasonable two years earlier, and this version went into production as the A6M2. Fifteen were sent to China in July 1940. In the following month, in their first combat sortie, they dived from a height of 27,000 feet to attack defending fighters over Chungking, and shot all the Chinese aircraft from the sky in one quick pass.

Japanese naval aircraft of that period were given type numbers based on the last figure of the year in which they went into production. So, as 1940 was the year 2600, according to the Japanese calendar, the Mitsubishi A6M became type 0 to the Navy and Zero-Sen (Zero fighter) to the admiring Japanese people.

As the war progressed, it was produced in many versions, by both Mitsubishi and Nakajima, in an effort to meet the growing might and efficiency of allied air power in the Pacific. The A6M5 and 6 had uprated Sakae engines, giving up to 1,210 h.p.; bombs were added to the guns for attacking targets at sea and ashore; and Zercs carried countless volunteers to their death in suicide dive attacks on U.S. and British warships. The final A6M8c version was even more powerful, with a 1,500 h.p. Mitsubishi Kinsei engine and speed of 358 m.p.h.. but before it could enter service the war was lost for Japan.

Standing in front of the restored Zero is Japanese modeller Yoshio Kohashi wearing wartime pilot's uniform. In the background is the Kawasaki 61 'Tony'



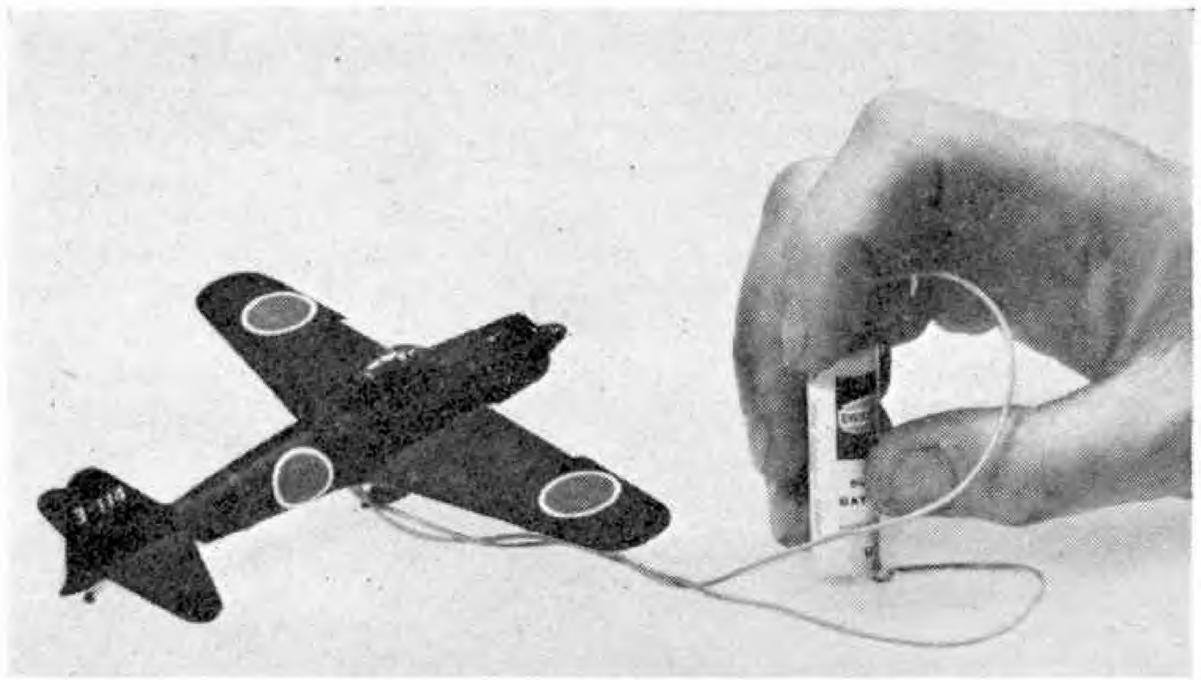
So complete was the defeat that not so much as a propeller or wingtip of a Zero could be found in Japan a few years ago, as a relic of this phase of the nation's aviation history. Then, in the Spring of 1962, a group of telephone engineers found a damaged Zero whilst working in a fresh water swamp on the island of Guam. A row of bullet holes spaced across the starboard wing and into the radio, just behind the cockpit, a bent propeller and closed cockpit hood told their own story of a belly landing from which the pilot walked away.

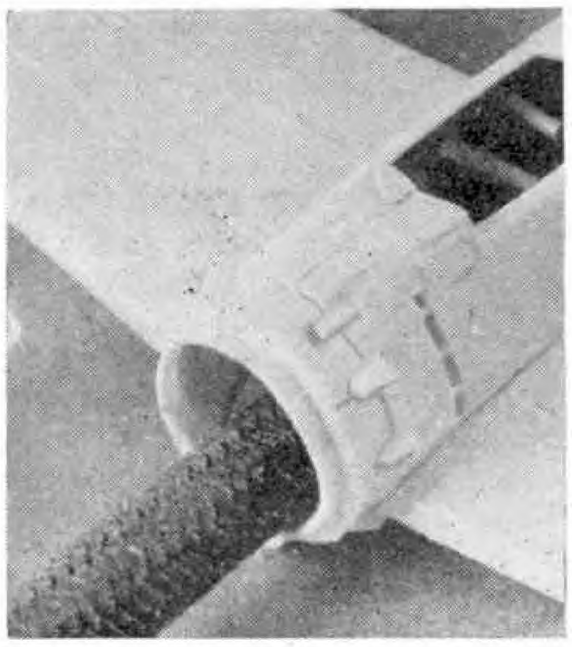
After the fighter had been fished out of the mud and water, and washed down, its metal parts were found to be in a good state of repair, despite at least 17 years of immersion. An American journalist named Dale Willoughby saw the remains resting on a pallet at the end of the runway at the Naval Air Station, Agana, Guam, photographed them and sent prints to the editor of the Japanese aviation magazine *Koku-fan*. Their publication was followed by a request from the Japanese Government to the U.S.A.F., asking if the Zero could be rescued from the scrap-heap.

On January 17, 1964, the Zero was flown in a Lockheed Hercules transport to Gifu, near Kyoto, the old capital of Japan. Hundreds of hours of patient work by volunteers of the Japan Air Self-Defence Force restored it to immaculate non-flying status, and the Zero now stands, side-by-side with a Kawasaki 61 'Tony' fighter, on the Gifu airstrip.

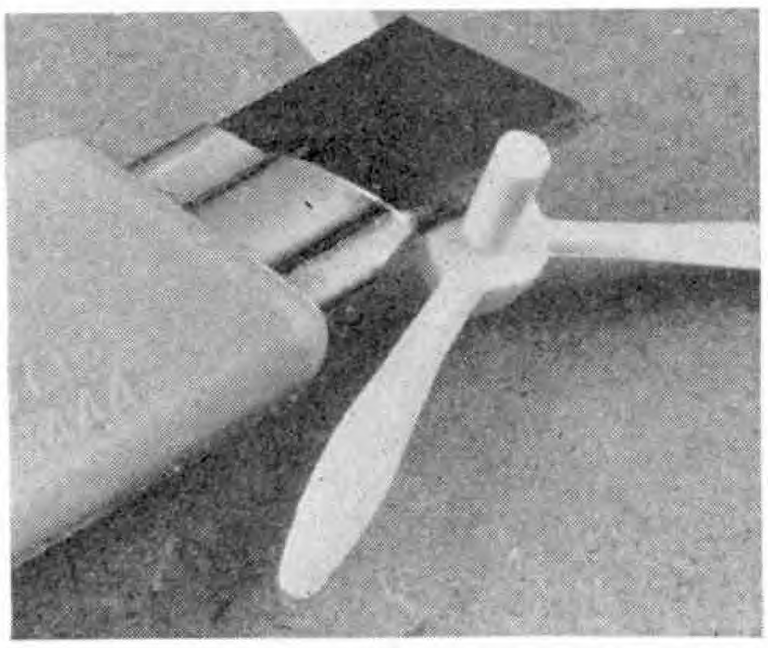
CONTACT!

The new Mabuchi 'Baby' motor is so small that it can easily be fitted inside a 1/72 scale plastic model. DOUG McHARD did just that with a Revell 'Zero' kit and took some photos to show how easy it was.

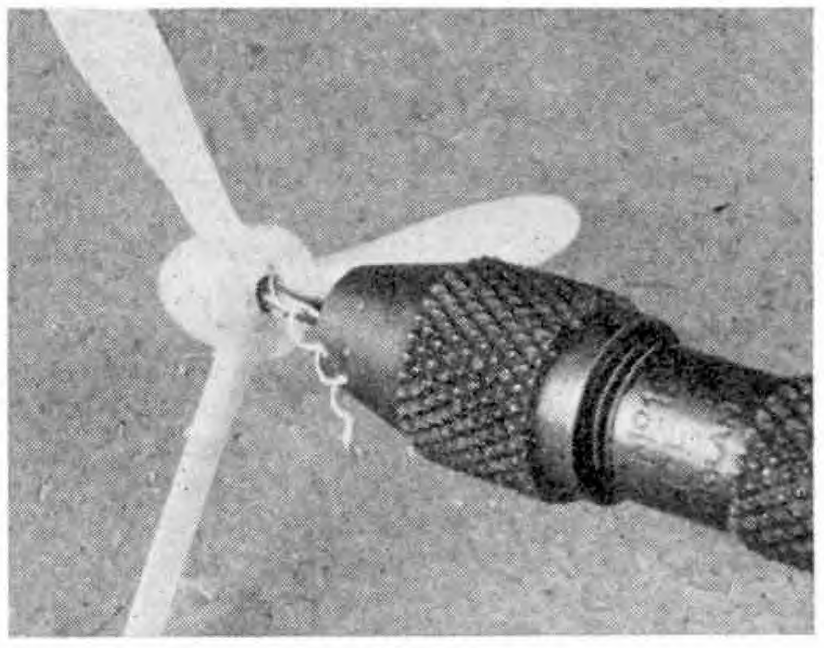




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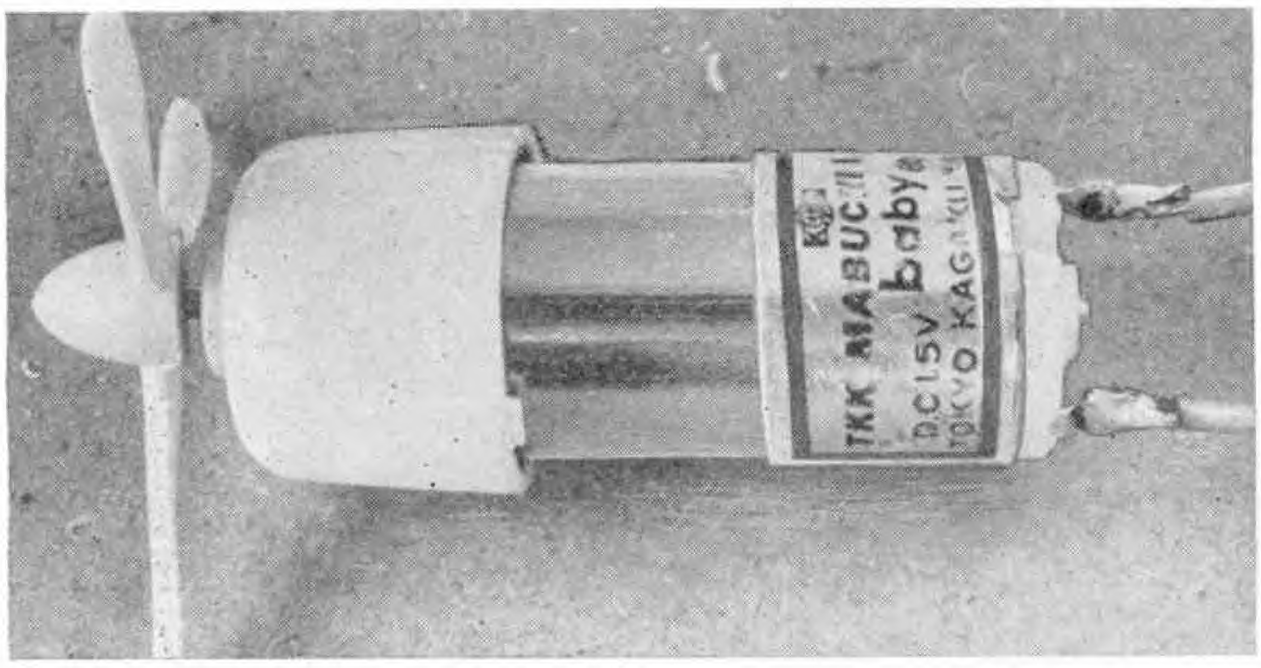


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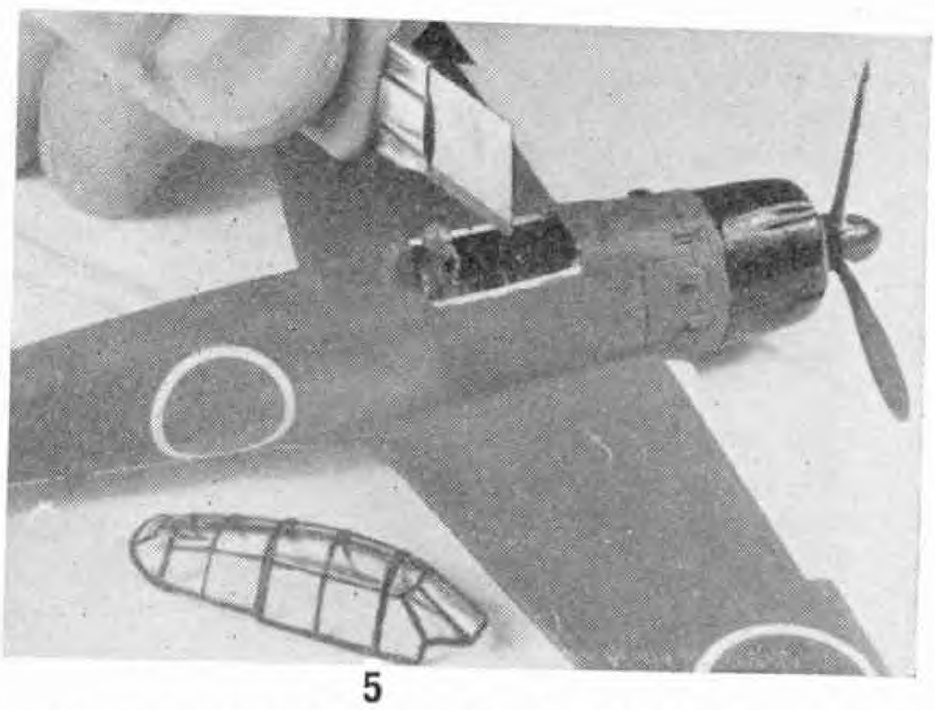
Photo 1. Assemble the wing and fuselage, wait until the cement dries, and then, with a round file, enlarge the cowling hole until the motor is a nice 'push fit'. Part of the upper surface of the wing centre section will also have to be filed away to enable the motor to be pushed fully back into the fuselage. If you haven't got a round file, you can use coarse garnet paper wrapped round a short piece of ¼ in. dia. dowel

Photo 2. The projection behind the propeller must be carefully removed with a sharp knife

Photo 3. With the drill firmly mounted in a pin chuck, carefully drill out the boss to take the motor shaft. Check continually during the drilling operation to make sure the hole is not running 'out of true'. A number 53 drill is just the right size for the ob and the propeller should be fixed to the shaft with a drop of contact adhesive such as Bostik I, AFTER fitting the cowling in place!



4



5

Photo 4. Bend the two motor tags back and solder two 6 in. lengths of thin plastic covered wire to them. If you are unable to solder, you must make the connections by threading the wire through the tag holes and twisting it back on itself. The joint should then be tightly bound with thin Nylon thread. When the motor is in place, the wires emerge from the fuselage through the underside slot intended for the stand fixing. (This picture is TWICE life size!)

Photo 5. The model may be left in its unpainted (light grey) state or the upper surfaces may be painted matt dark green. Paint should be applied with a fairly large (No. 4) brush and remember —two thin coats are better than one thick one! Polystyrene cement does not stick to painted surfaces so when you fit the cockpit cover you must carefully scrape away the paint from the surfaces to be joined. You will probably find it easier to paint the cockpit framing before fitting it in position There are many other models that are equally simple to adapt to take the 'Baby' electric motor. It costs 5/11, works off a 1.5 volt pen cell and you can get one from Rip-max Models and Accessories, 80, Highgate Road, London, N.W.5
As a further refinement, why not conceal the battery in a stand base? Another idea is to house the little battery in the back of a dummy re-fuelling tanker—the wire leads then become the fuel lines!

NEXT MONTH—How to build a model of the famous British airship R-100

For the keen young craftsman...

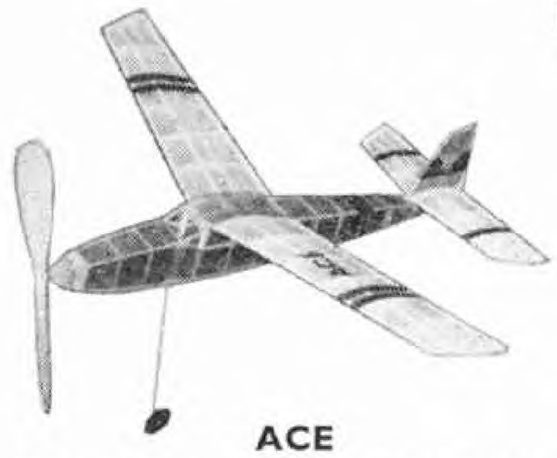
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SENATOR

Novel contest model which is capable of a fine performance. Features a single leg undercarriage. Wingspan 32 in. **8/9**



ACE

Sleek cabin model. Construction is very simple, and the number of cut-out sheet parts have been kept to a minimum. Wingspan 30 in. **7/7**



COMPETITOR

The pleasing lines of this model have made it one of the most popular in the K-K range. Performance is outstanding. Wingspan 32 in. **10/10**



GEMINI

Beginners duration model with fuselage parts, tailplane and fins, in pre-cut pre-decorated sheet balsa. Wingspan 22 in. **9/2**

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KEILKRAFT

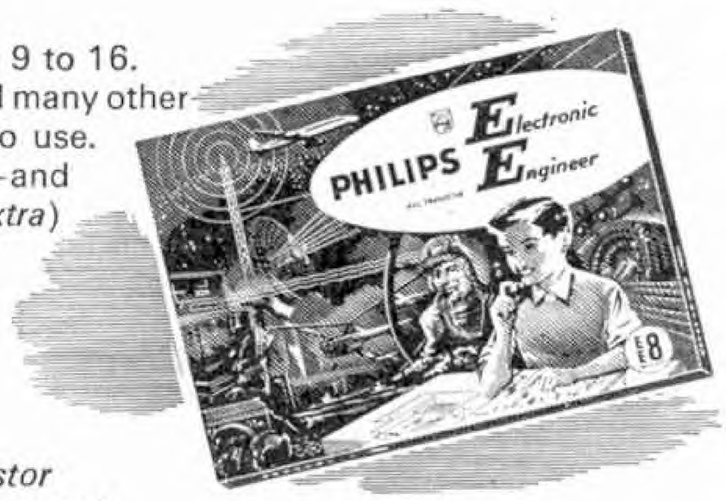
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These Kits provide all you need to construct efficient medium-wave transistor radios. Each basic Kit includes a comprehensive manual and components for a smart cabinet. Again, there's no soldering and no previous experience is needed. **RE1** – *makes 2-transistor radio with earphone and cabinet – £5.9.6d. (battery extra)* **RE1A** – *the 'add-on' kit to convert RE1 to RE2 – 37/6d.* **RE2** – *makes 3-transistor radio with loudspeaker and cabinet – £6.19.6d. (battery extra)*

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(EK48)

by Jerry Ames

Cars may come, and cars may go, but the ubiquitous 'Minor' in its various forms seems to go on, and on .... **Jerry Ames** tells the fascinating story of this remarkable 'Minor' family.

40 YEARS OF MORRIS MINOR

ONE of the oldest and most successful British models is the Morris Minor. It was first introduced to an admiring motoring public in 1928 and today, although changed in almost every respect except size, it is as important as ever, indeed so great is the demand for the current Minor, that as a rule you cannot buy one off the peg, but may have to wait as long as three months.

During a span of nearly 40 years, the designs of Morris Minors have been changed many times, they have bridged a World War and exerted subtle influence on the pattern of touring, sports and racing cars.

Engines have varied in size between 803 cc. to 1098 cc., whilst valves have been operated by advanced single overhead camshaft, side valves, to the present day method of overhead valves actuated by pushrods. Morris Minor bodies have been equally varied, including open two seaters, four seaters, saloons, convertibles and a dual purpose Traveller. Also the original Minor formed the basis of the exciting MG Midget, one of the most successful pre-war type sports and racing car designs that astounded motoring enthusiasts in its day, by winning so many races all over the world.

Many of these pre-war Midgets are still winning Vintage events, a tribute to the brilliance of the original Morris Minor design. A Morris Minor became the world's first £100 motor car. At the other end of the scale the engine, highly tuned, has powered record breaking machines at speeds of more than 200 m.p.h.

How did it come about, who originated the design? It may come as quite a surprise to many people to learn that the engine of the first Morris Minor, that supplied the inspiration for the car and its successors, dates back to World War I in 1918.

It was designed as a 12 cylinder aero engine by Hispano Suiza and came from the drawing board of Marc Birkigt, one of the worlds greatest designers.

After the war Marc Birkigt sold it to Wolseley, who had already been making Hispano Suiza engines under licence. Wolseley motors used the design in their 10 h.p., 12 h.p. and 15 h.p. single overhead camshaft models during the early Nineteen Twenties, with a combined gear box and back axle.

Nearly 'the ton'

In 1922 the firm's competition department produced a sporting 70 m.p.h. two seater, the Wolseley Moth, but the works cars were exceeding 90 m.p.h. at Brooklands, quite a performance from a 1261 cc. engine.

In 1927, when Wolseley were in serious financial difficulties, the firm was bought by W. R. Morris, later Lord Nuffield, whose Morris cars were already established as leaders of the new family car movement. Morris was intrigued by the design of the 10 h.p. Wolseley, although in his opinion it was too heavy and expensive. So using the overhead camshaft engine with dimensions reduced to 847 cc. and fixing it to a lighter chassis with conventional three speed gear box, he announced the new Morris Minor in 1928, attractively priced at £135.

Overnight the new Minor became a sensation, to challenge every other small car on price and performance; whereas the old, more expensive Wolseley Ten had a top speed of only 48 m.p.h., the new Morris Minor would go to 60 m.p.h. For the first time the popular Austin Seven had a serious challenger.

The two models stimulated keen rivalry between the volatile Herbert Austin and the more phlegmatic W. R. Morris, the two became leaders in the small car world, and began a price war. In 1930, W. R. Morris, determined to lead on price as well as performance, announced the first £100 motor car, a Morris Minor fitted with side valve engine. The £100 two seater, with its black painted radiator and shorn of little extras that make motoring more pleasant, was a milestone in the family car price war, but it was not a commercial success. Most families soon decided they would rather pay a few pounds extra for more refinement.

The overhead camshaft Morris Minor opened the floodgates for the world's first big production low priced sports car, the MG Midget, selling at £175 with a top speed in excess of 65 m.p.h. Cecil Kimber, founder of MG, backed by W. R. Morris, was quick to realise the immense sporting possibilities of the little Minor, and in 1929 introduced the Midget to the keen motorist of his day, after an impressive run by 24 of them in the Double Twelve Hour race at Brooklands.

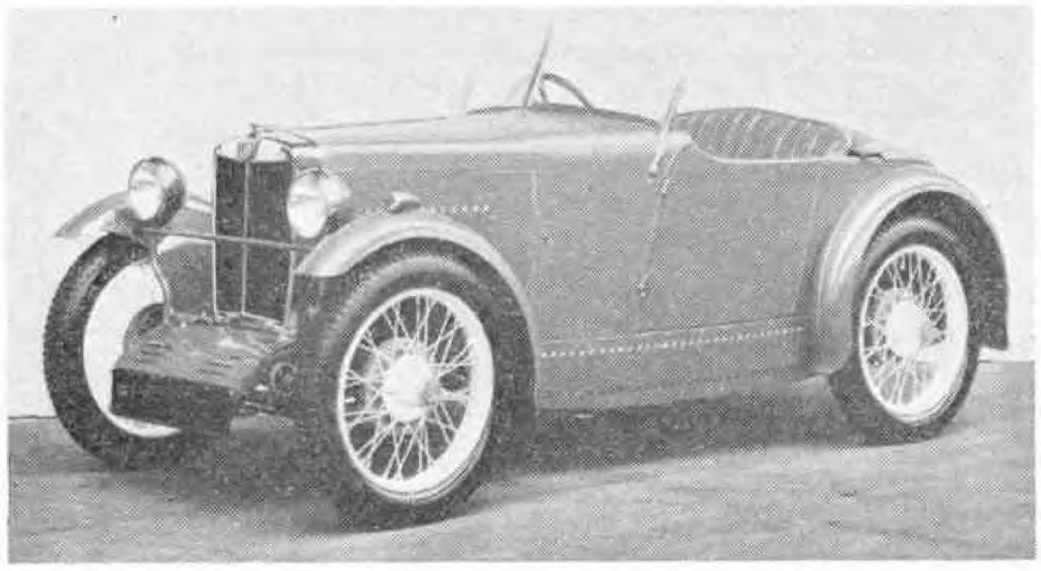
This was only the start, the cars went from victory to victory, their fame scaled new heights when Norman Black won the 1931 International Tourist Trophy in Northern Ireland, proving the little MGs were in their element in a road race.

Meanwhile, there were new developments afoot, two more cylinders were added to the four cylinder Midget and were used to power the six cylinder Wolseley Hornet and Magna sporting four seaters. This engine led directly to the K3 two seater overhead camshaft supercharged 1087 cc road racing Magnette, capable of 112 m.p.h. in standard production trim.

On the race track

Earl Howe suggested that a team of K3 Magnettes should be entered in the 1933 Italian Mille Miglia and, to the amazement of numerous rivals, it walked away with the team prize. This performance led the great Nuvolari to request a K3 Magnette for the Tourist Trophy and with it he won the 1933 race.

Development of the side valve Morris Minor led to the famous Series E Morris Eight, which appeared in 1935 and at prices of £142 10s. 0d. sold in their thousands up to the outbreak of war. The Series E with 918 cc. side valve engine was a good car, equally popular as a saloon or an open four seater. After the war, Morris in 1948 announced the MM still with 918 cc side valve engine, and a pleasing little two door saloon



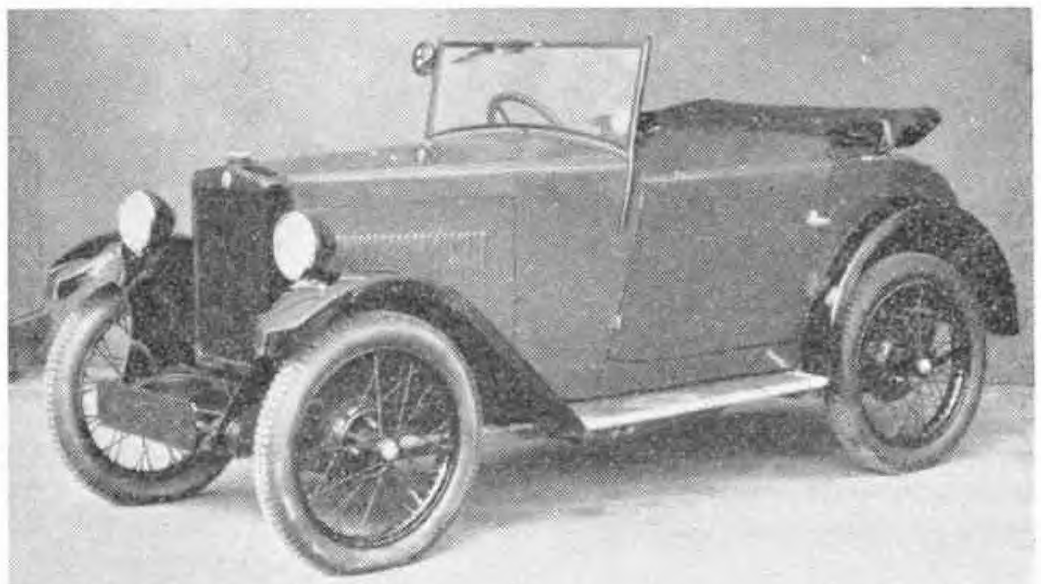
1929 *The first MG Midget, which was developed from the overhead camshaft Morris Minor. It could do 68 m.p.h.*



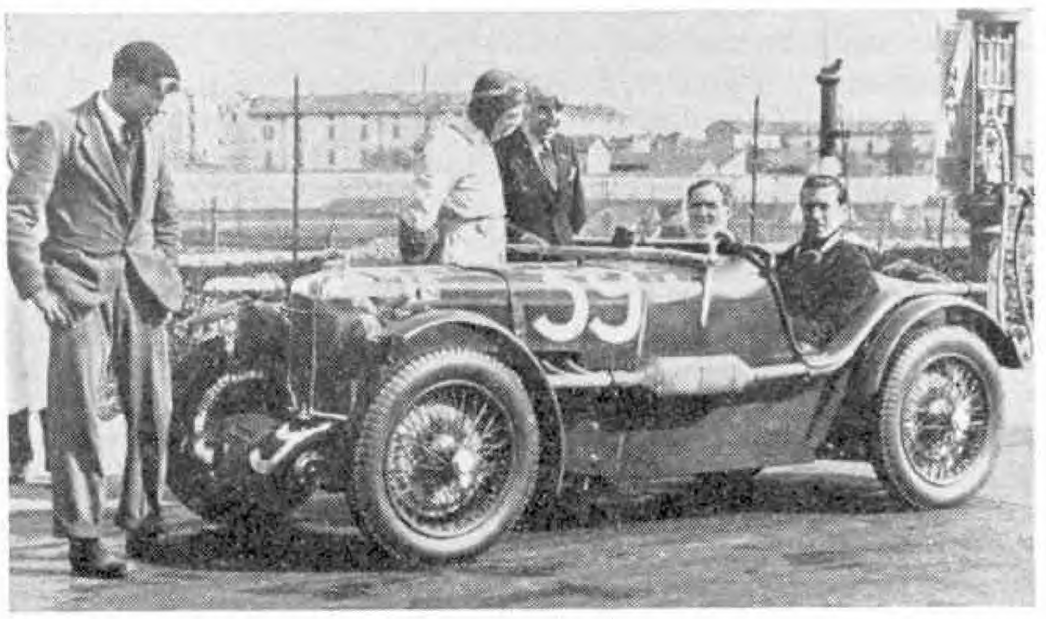
1931 *Norman Black in his MG Midget. With this car he won the Tourist Trophy in Northern Ireland*



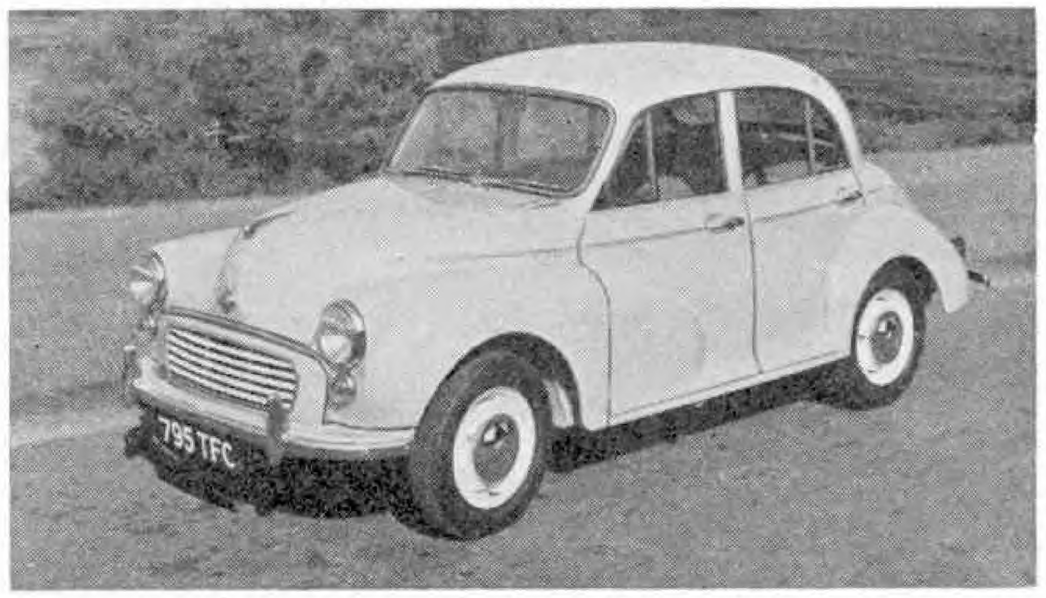
? *Where does this World War I S.E.5 fighter fit in with the 'Minor' story? The clue is its Hispano Suiza engine! (Cyril Peckham 'photo)*



1930 *For just £100 you could buy this 60 m.p.h. Morris Minor! It was the sensation of the Olympia show*



1933 *Earl Howe (in white overalls) chats to George Eyston at the wheel of his K-3 Magnette before the Mille Miglia race. Magnettes won the team prize*



Today *The ageless shape of the current 76 m.p.h. Minor—a familiar sight on roads the world over*
Miniatures of this car have, for some reason, been almost unobtainable until now, but Spot-on have recently filled the gap with a fine 1/42nd scale model *(see page 7)*

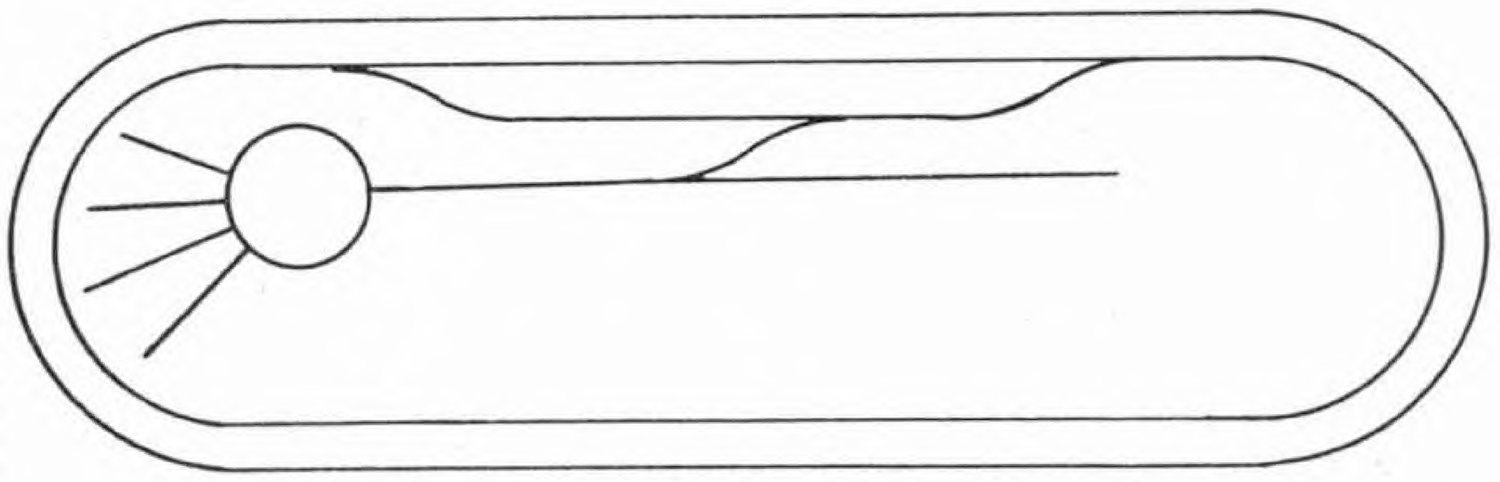
body. For 1950 a four door saloon was added, but prices were considerably up on pre-war days, although as cars were difficult to buy there was no lack of demand.

In 1952 came the first real change in post-war Morris Minor design, for which Alec Issigonis was largely responsible. He had also envisaged the new model with a horizontal engine, but the board of the newly formed British Motor Corporation decided against it, instead introducing a smaller 803 cc o.h.v. pushrod engine, developing 30 b.h.p., enough to give the new Morris Minor saloon an easy 65 m.p.h. Issigonis had designed a wider track chassis, to take the horizontal engine, and it soon became evident this wider chassis had brought about a tremendous improvement in roadholding and handling. The new Morris Minor achieved a remarkable reputation among keen motorists and it wasn't long before other firms widened their chassis, to keep in step with the improved handling of the Morris Minor.

The next major alteration came in October 1956 when the o.h.v. engine was enlarged to 948 cc, at the same time improvements were made to the gearbox. This model, the Morris Minor 1000, with its speed increased to 73 m.p.h., lasted until 1962, but before it ran out, BMC celebrated the millionth Morris Minor in 1961, the actual car being finished in a special shade of lilac and bore the nameplate Minor 1,000,000. Oddly enough one or two replicas were made and finished in the same colour and bore similar nameplates.

The current Minor 1000, introduced in 1962, has a 1098 cc engine and speed of 77 m.p.h., in fact it is 20 m.p.h. faster than the Minor of nearly 40 years ago, to give some indication how much the Minor has progressed. But the story will not end there, for new developments are being constantly tested, one thing is certain, whenever a worthwhile change is thought desirable, it will certainly appear on the new Morris Minors.

THE TRI-ANG HORNBY LAYOUT



This track plan of the railway layout shows its basic simplicity, yet the development potential is enormous

THOSE of you who visited the National Models Show in the Horticultural Hall in August will no doubt have noticed the Tri-ang Hornby layout and stand, which displayed most of the models and products of Rovex Scale Models Ltd. Even the scenery was from the Tri-ang Hornby range, and the whole display aroused a great deal of interest. The plan was basically very simple, consisting of a station at the front of a double track oval, rising at both ends to a second higher level station at the back. Both stations were extremely simple in design, and their initial cost would be quite modest. The baseboard too was small enough, for most houses where space is always at a high premium.

The four different series of products made by Rovex Scale Models—Tri-ang Hornby, Model-land, King Size Colourings, and Minix Cars provide almost unlimited scope in layout planning. All are equally important for giving the model railway that certain 'completeness', especially where small layouts are concerned. With small and simple projects of the sort shown at the exhibition, the treatment of the layout and the surrounding scenery is more important than that for larger layouts, where detail can often pass unnoticed. This particular layout emphasised the greatly increased interest and variety that can be provided by a Minic Motorway system built into the scenery surrounding the layout. In effect, one achieves two operating systems on the one baseboard!

The design of both the railway and the motorway system was purposely kept simple to illustrate how such a layout can be built at comparatively modest cost, and yet retain considerable interest by virtue of the concentration of a wide variety of equipment. The sketch plan reproduced on this page shows the track arrangement of the lower station, which has a loop for holding an additional train, or alternatively for allowing shunting operations to proceed. It also has a crossover point connecting it with a turntable and locomotive depot, with a siding for the reception of goods trains. The upper station consists of platforms only, and has no facilities for goods or other traffic—an ideal arrangement for reducing the cost of the layout. The station can in any event be enlarged at a later date, but the baseboard would first have to be extended in width.

The hill on either side of the upper station was built up from materials in the Model-Land range, except, of course, for the super structure, which is easily

Power pylons, Catenary electrification and a motorway lend real atmosphere to this scene

built from wire mesh, or sacking supported by pieces of wood. The gradient at both ends of the layout was not made too fierce, but was just sufficient to raise the station above the base board by two or three inches. A catenary was also included to give the layout a modern appearance, and also to allow the operation of a pantograph locomotive.

Two trains in continual use were an EM2 Co-Co electric pantograph locomotive used with three B.R. maroon coaches, and 'Jinty' 0-6-0 tank with two car carriers and a brake van. These, in fact, form the basic contents of the 'Highwayman', and the new 'Car-a-belle' train sets, although the former, as supplied, has only two coaches.

Although the two ovals of track forming the main lines on the layout are not connected by crossovers, it would be quite a simple matter to add two further points to either the bottom station, or at the upper station to allow trains to be exchanged between the different tracks. R490 points will give a trailing crossover, and R491 a facing crossover. Many other refinements could be included if sufficient funds and space were available. For instance, in addition to the crossover points already mentioned, a second set in the lower station would allow shunting to take place between the two main lines and an additional loop of track on the outside oval would allow an additional train to be held, or shunting operations to take place. With a baseboard of greater width, additions of a much more extensive nature could, of course, be made and it would be possible for quite a comprehensive second station to be built in place of the existing rather basic upper station.

The Scenery

The Model-land buildings on the layout contributed much to the final effect. King Size Colourings, already mentioned, were used for representing various kinds of earth surface, and also for making trees and other scenic features. Eight basic ground colours are available, and there is also a cork bark which is used for strikingly realistic cliff faces, and cuttings—anywhere, in fact, where rock surfaces are to be represented.

The upper station building was assembled from standard Tri-ang Hornby components—two Ticket Offices R582 forming the ground floor, and one Station Upper Floor R474 forming the top part of the building. Platform extensions to slightly lengthen the basic platform units were also added. The platform on the other side of the station was built up from standard platform units with one R459A Large Station Set, and one R458A Small Station Set.

As can be seen from the sketch plan, there's a Tri-ang Hornby turntable at one end of the layout leading into two, two-road Hornby Dublo engine sheds, placed side by side. The lower station is also built up from Hornby Dublo components, in this case the Hornby Dublo Through Station, and behind this is the Hornby Dublo goods shed. Many other items of rolling stock were on display at the show, including the Tri-ang Hornby Blue Pullman Set, the Hornby Dublo 0-6-2T, 'Barnstable' pacific locomotive, and goods rolling stock from both ranges.

The new town series of Model-Land buildings, which should be in the shops in time for Christmas, was displayed for the first time. Of these perhaps the most useful are the Town House RML 38, and the Small Shop and older style Office Block RML 45. Buildings like these can be seen in large numbers in nearly every part of the country, and the kits themselves are moulded in finely detailed ready-coloured plastic; red brick in the case of the House, and concrete lower surfaces with brick uppers in the case of the two shops.

The modern counterparts of the older style office blocks are the Medium Shop and Modern Office block RML 46, which contrast nicely with the other buildings, and which are very representative of the type of architecture seen in most modern towns. Other models in the town range include a Supermarket RML 60, a Garage RML 68, a Single Storey Medium Shop RML 37, and a Single Storey Small Shop RML 36.

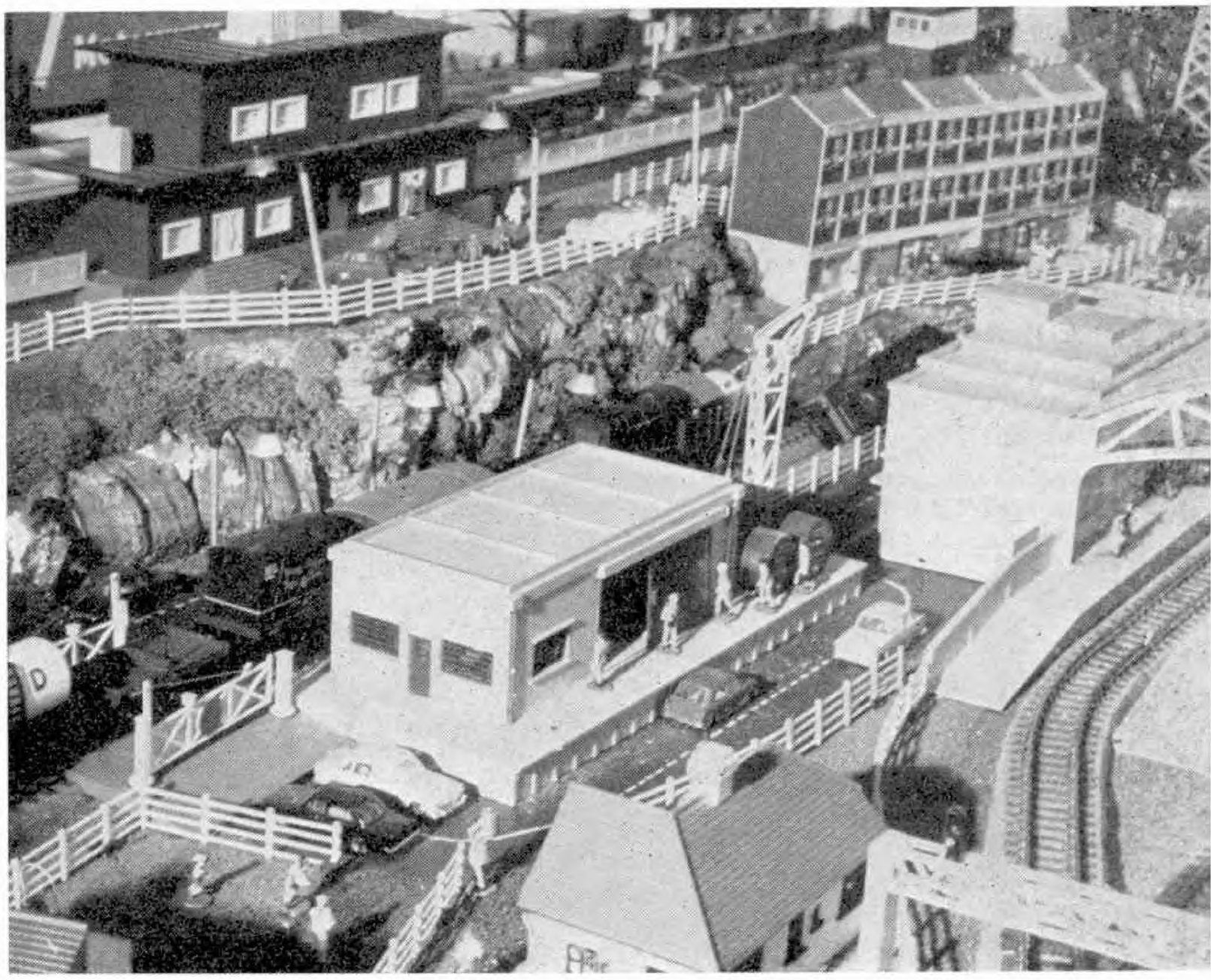
A new series of industrial buildings is the RML 65-67, consisting of a Loading Bay RML 66, Twin Production Bays RML 67, and Factory Power House RML 65. These units can, once assembled, be combined to form one complete factory, or can, of course, be used separately.

One particular Model-Land item that is much in demand is the Church RML 17 and RML 58, either with or without working chimes. These are provided by a precision built musical unit, which comes with the RML 17 model. The church is beautifully moulded to represent a brown-grey stone, with every block faithfully reproduced. Finally one of the latest introductions to the range, often denigrated in real life, the massive power pylons that are now seen marching like a race of giants across the countryside, an unusual feature to include on any layout, and very topical!

—Linesman

AT THE NATIONAL MODEL SHOW

Cork bark 'cliffs' and Model-Land Buildings add variety and realism. You'll get lots of modelling ideas from these photographs!





Before the war at Spithead-1937. The Admiral Graf Spee attends the Coronation fleet review. Note the spotter plane on its catapult



The course of the Admiral Graf Spee from the outbreak of war, until the Battle of the River Plate

SEPTEMBER 30th, 1939. Not quite one month after the outbreak of war. And chugging sturdily up the South American coast off the Brazilian port of Bahia was the 5,000-ton tramp S.S. *Clement*. Tubby, begrimed and scraped by dozens of busy wharves round the world, Yangtze mud and Indian Ocean barnacles on her bottom, no more utterly unwarlike-looking ship could be imagined.

Tropic sun blazed down on her decks as she bumbled along through mirror-like sea. In her hold, raw materials for Britain's wartime cities. A tiny dot, creeping up the map.

On October 1st, a signal was dropped, in code, on an Admiralty desk in Whitehall. It read: BRITISH SHIP MBBL (CLEMENT) SUNK BY SURFACE-RAIDER 75 MILES SOUTH-EAST PERNAMBUCO 1400 TODAY.

The effect of that signal was electric. For it could have only one meaning: somewhere, in the South Atlantic, a German raider was loose.

Now that might mean many things. It might mean that a lone armed-merchant-man, slow and lightly-armed, had had a lucky encounter. If so, she might be cornered and dealt with speedily. But it might mean something more—and so far, nobody knew *how* much more. The very worst: a pocket battleship. Germany had three. And nobody knew where they were.

If the lone raider on the loose in the South Atlantic were one of those three, then shipping-lanes on which our life depended were at the mercy of a deadly enemy.

More victims . . .

The memory of what one raider could do was a living thing in Allied navies. In World War I, the German *Emden* had gone on a three-month rampage. Disguised as a British cruiser, and captained with brilliance and daring, she left a trail of 100,000 tons of sunken ships across 30,000 miles of Indian ocean. It had taken combined efforts of 16 capital warships of five navies to track her down. Now, a new war. And somewhere, on the vast South Atlantic, a lone raider had appeared from nowhere, struck, and retired. If a pocket-battleship, she was something far out of Emden's class. She was something that could outshoot, and out-distance, practically anything we could put to sea against her.

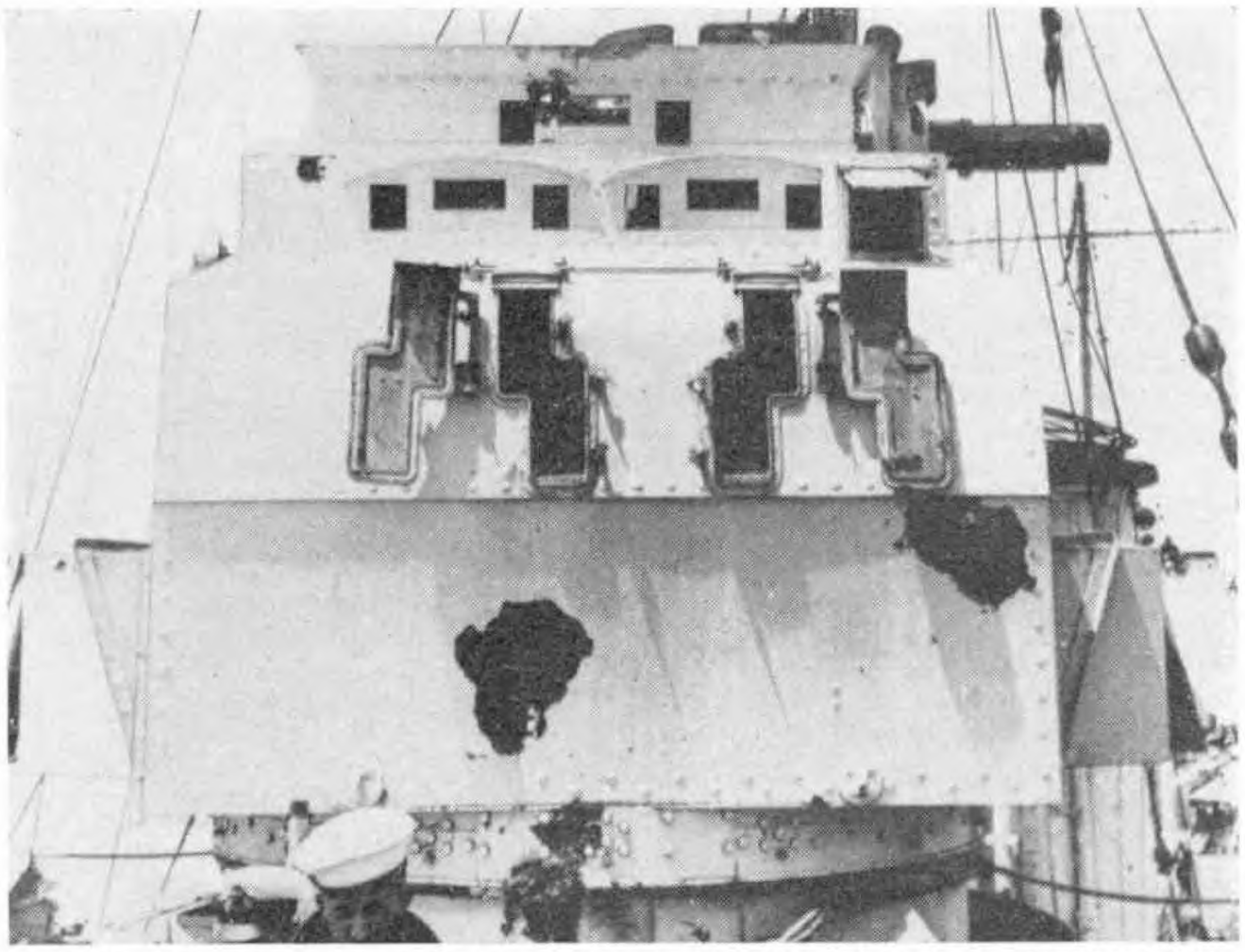
Who was she? First Sea Lord, Sir Dudley Pound, and the First Lord of the Admiralty, Mr. Churchill, were informed of *Clement*'s sinking immediately. They waited impatiently, for news.

Next day, another signal: BRAZILIAN SHIP EXPECTED ARRIVE BAHIA WITH THIRTEEN SURVIVORS BRITISH SHIP MBBL. IMMEDIATE REPORT WILL BE SENT. . . .

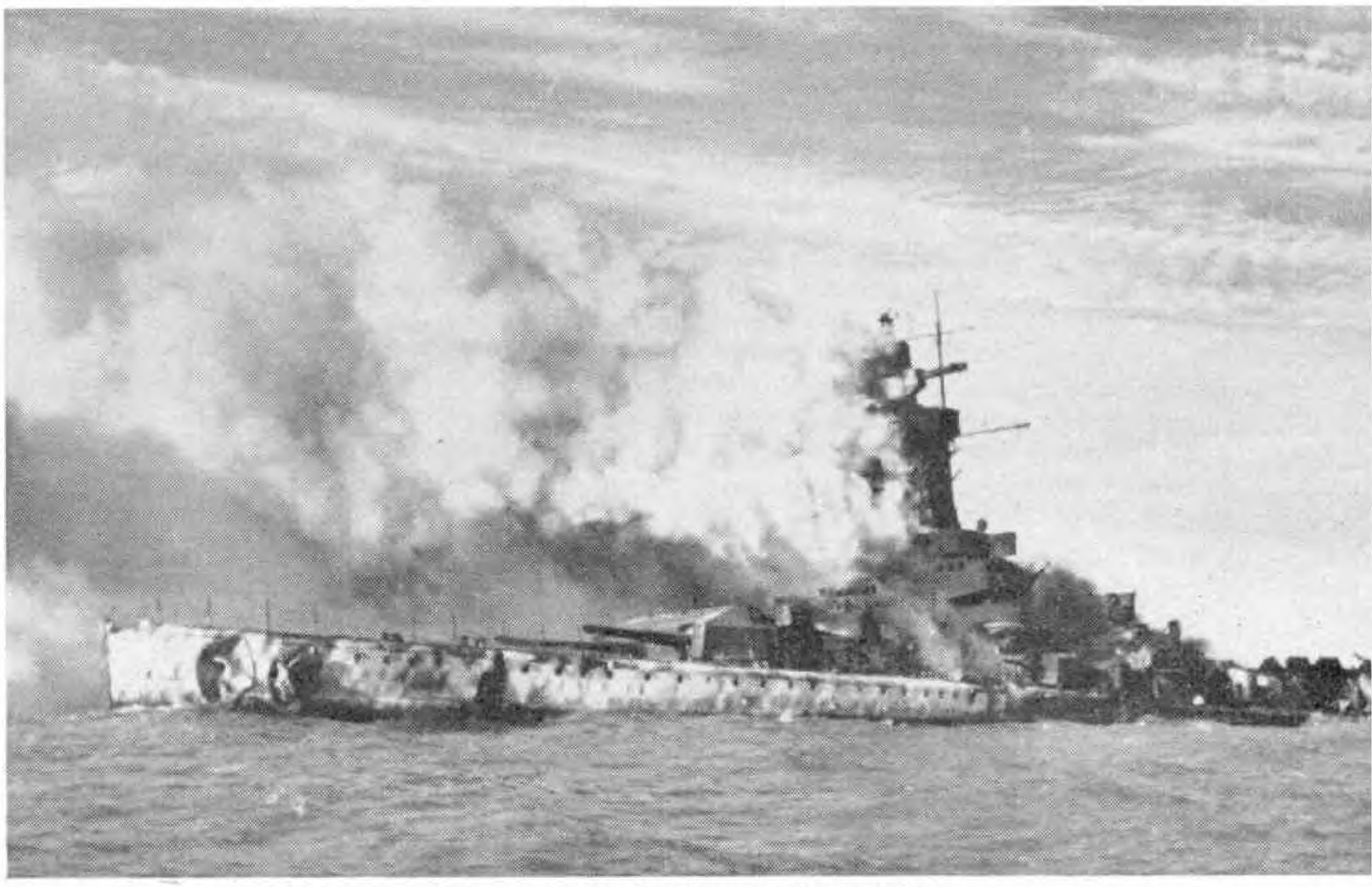
What would those survivors tell? Three hours later: BRITISH SHIP MBBL MACHINED-GUNNED BY SEA-PLANES . . . LATER SUNK BY SECONDARY ARMAMENT. . . .

by Michael Kinsman, M.A.

the hunting of the hunter



The Battle of the River Plate. 13th-17th December, 1939. The director tower of H.M.S. Achilles showing splinter damage after an 11-inch shell from the Admiral Graf Spee had burst just short of the ship. These splinters did not put the director out of action or damage any important instrument



The tragic end of a great ship. Burning and slowly sinking beneath the waves in the River Plate estuary

Seaplanes! What enemy ship carried seaplanes? It could only be something big. A pocket-battleship or cruiser. . . . Hunting groups formed to speed to all areas where a raider might strike again. Nine groups of warships fanned out over the oceans.

And already, German plans were working. German policy for ocean raiders was not only 'disruption and destruction of enemy shipping', but 'frequent changes of position—to create uncertainty'—and tie down our warships in the hunt. And already, one sinking had had immense and far-reaching effect on our navies. Diverted to the hunt from our naval commitments round the world: one battleship, three carriers, one battle-cruiser and five cruisers!

German Admiralty had reason to be pleased.

Where next would the raider pounce? At Admiralty H.Q. a single cross on a huge chart marked *Clement*'s end. Where would the next appear?

October 5th: S.S. *Newton Beach,* **captured.** The raider slipped away with her prize. October 9th: a plane from *Ark Royal,* in Hunting Group H, sighted a ship, radioed her to identify. She said she was American, and the plane went away. She was, in fact, the raider's fueller, *Altmark.* A narrow escape. . . . October 7th: cargo-boat *Ashlea,* **disappeared.** October 10th: *Huntsman,* 8,300 tons, **captured.** October 22nd: *Trevanion;* **sunk.**

And so, for two months, a trail of destruction and capture lengthened across South Atlantic, into the Indian Ocean, and back again. Ship after ship. One raider, heavily armed, lightning-fast, nameless. . . .

Then, December 2nd, after midnight, message intercepted by British steamer: RRR RRR RRR 19 deg. 5′ south, 05 deg. 05′ east, *Doric Star* GUNNED BATTLESHIP.

Battleship! 0501—another signal flashed out of the night: this time another vessel. Again, the fateful RRR—meaning 'surface-raider'. Two minutes later, transmission stopped. Silence. Whatever had happened out there on the dark water was over.

Which battleship? Commodore Harwood, commanded the nearest squadron of cruisers. Quickly, he planned. At 15 knots cruising the raider could move from her last known position to the Rio de Janeiro shipping area by morning, December 12th, to the rich River Plate area by the 12th or 13th, or the Falklands by the 14th.

Which? He decided: the Plate. So on that area three cruisers converged. Their names were soon to become famous: H.M.S. EXETER, H.M.S. AJAX and H.M.S. ACHILLES.

For speeding for the same area, grey hull low in the water: the raider. On her way she claimed one further victim. Then resumed her course, racing towards fate.

Dawn, December 13th. Harwood's small squadron, now in formation off Uruguay, swept the sea at action stations . . . looking . . . waiting. . . .

On those three ships, five officers and 59 ratings had less than two hours to live. At 0613 the squadron was speeding in

Continued on next page

line: *Ajax, Achilles, Exeter.* At 0614 smoke was sighted. *Exeter* was ordered to close and investigate. 0616: *Exeter* reported: I THINK IT IS A POCKET-BATTLESHIP. . . .

On *Exeter* a flag was run up, yellow-and-blue in the morning sun: ENEMY IN SIGHT BEARING 322. Alarm-gongs sounded: Action Stations! Hundreds of men raced to their posts, the excitement was intense: this was it! Gunnery control computers hummed. Each ship had become a machine, exact, split-second-timed.

For a moment the warships rushed, in uncanny silence, towards conflict. Range: 19,800 yards. Then the enemy's sides, racing low on the horizon, belched orange. A two-ton broadside, hurtling at one-fifth-of-a-mile each second, arced invisibly through blue-gold sky. Seconds later, the sea round *Exeter* erupted. The third salvo straddled her, one shell bursting amidships, killing the starboard tube's crew in a steel shambles. Another Another. The British and New Zealanders' guns roared response. Ships shook, trembled as they raced. 0624. An 11 in. shell shattered *Exeter's* 'B' turret, killing the crew, and steel splinters swept the bridge, scything down all there except the Captain and two others. Flame bellowed upwards. *Ajax* and *Achilles* shook with repeated fire. The three cruisers wheeled at speed, closing in. Their enemy: GRAF SPEE—10,000 tons of compact, furious battleship.

Battle joined. For 50 minutes the ships raced, wheeled and struck, salvoes raining blood and death across blue water. *Exeter,* a furnace, suffered blow after blow. Forward wheelhouse wrecked, decks holed and twisted, she reeled and burned. With incredible courage she fought back with one turret, as shells poured into her, exploding with terrible effect. At length, retiring behind smoke-screen, she withdrew.

0710. Harwood, on *Ajax,* ordered action broken off till dark. *Spee* sped toward the mouth of the Plate, *Ajax and Achilles* shadowing. Each ship attended her dead, her burnt and wounded.

Evening: battle, again, *Graf Spee* struggling, her steering wrecked, for the Plate—and repairs in Uruguay's neutral harbour of Montevideo. Under glow of lights of a suddenly wildly excited capital city, the warship slipped in, dropped anchor. Outside the harbour, as night deepened the British ships prowled, impatient.

Now began a drama that was to fascinate the entire world.

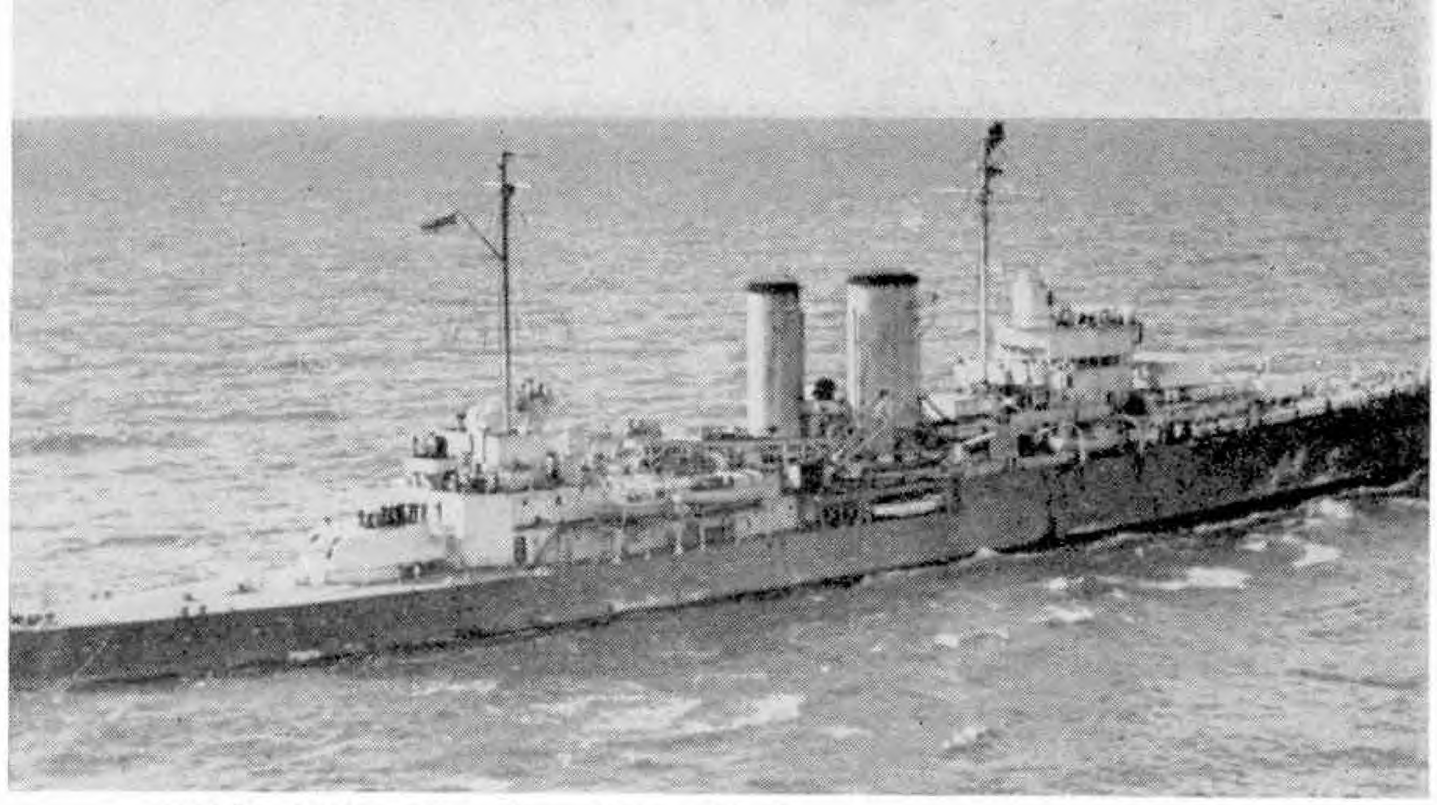
A German warship, in neutral harbour. Outside, the British. How long would she stay? Would she come out and fight? World attention focused on Montevideo, and on *Spee*'s Captain, Langsdorff.

Overnight, the whole world knew Langsdorff. An officer of great dash and exemplary humanity to prisoners, he had fought magnificently. During *Spee*'s raids, no ship had fallen to his guns till abandoned and her crew safely taken. The next move: his. What would he do? The world waited.

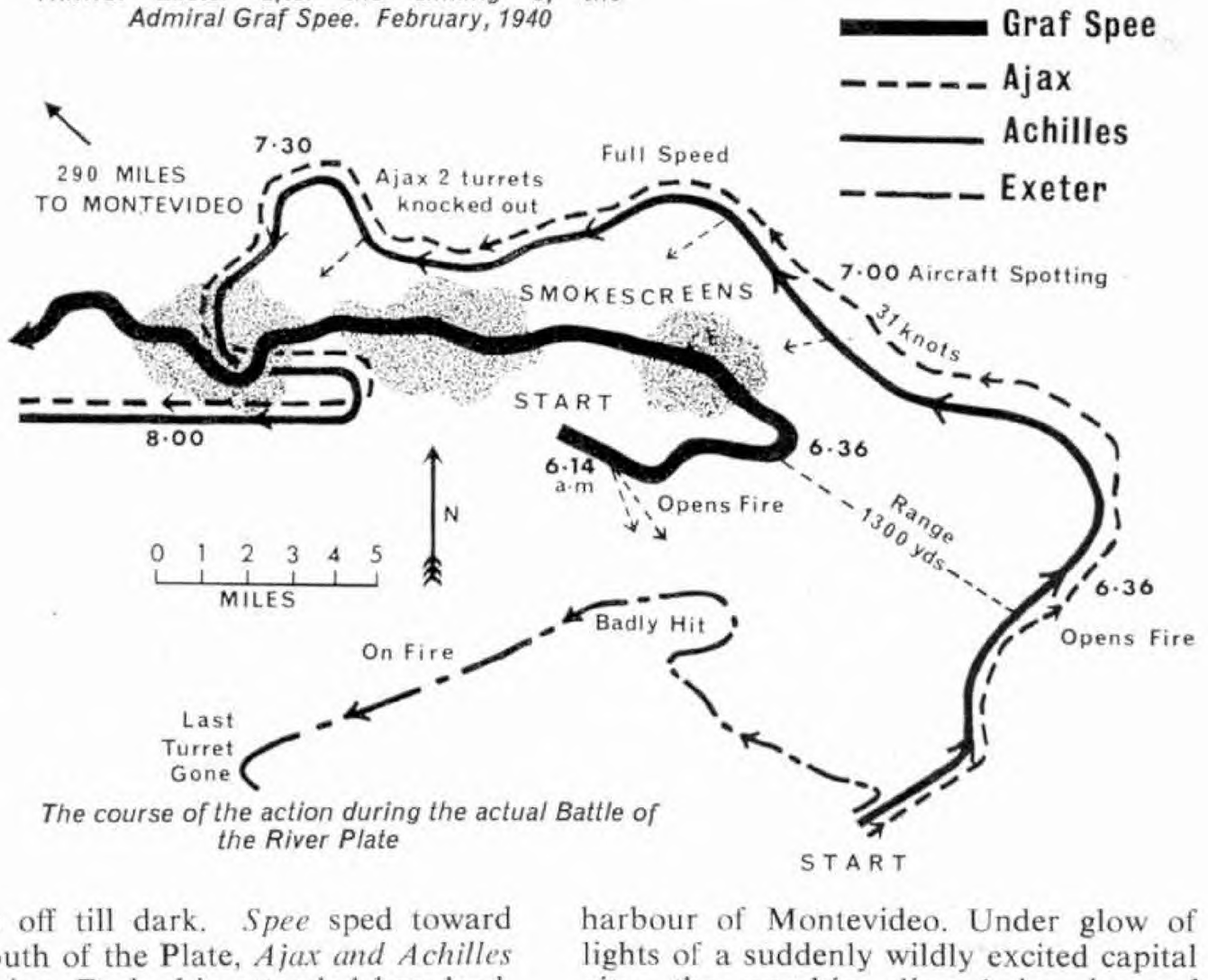
Spee's damage was grievous. By international law, a combatant can remain in neutral port long enough to repair damage—no more. Outside the three-mile limit, the British waited. Langsdorff asked the Uruguayan authorities for 30 days for repairs. Ashore, his British prisoners, whom he had freed, laid wreaths at a funeral for *Spee*'s dead.

The British wanted Uruguay to allow

Continued on page 47



H.M.S. Exeter after the sinking of the Admiral Graf Spee. February, 1940



The course of the action during the actual Battle of the River Plate

A proud Mr. Winston Churchill—then First Lord of the Admiralty—being cheered by the victorious crew of the battle-scarred "Exeter" upon her return home





THE H & M **87/6**

POWERMASTER

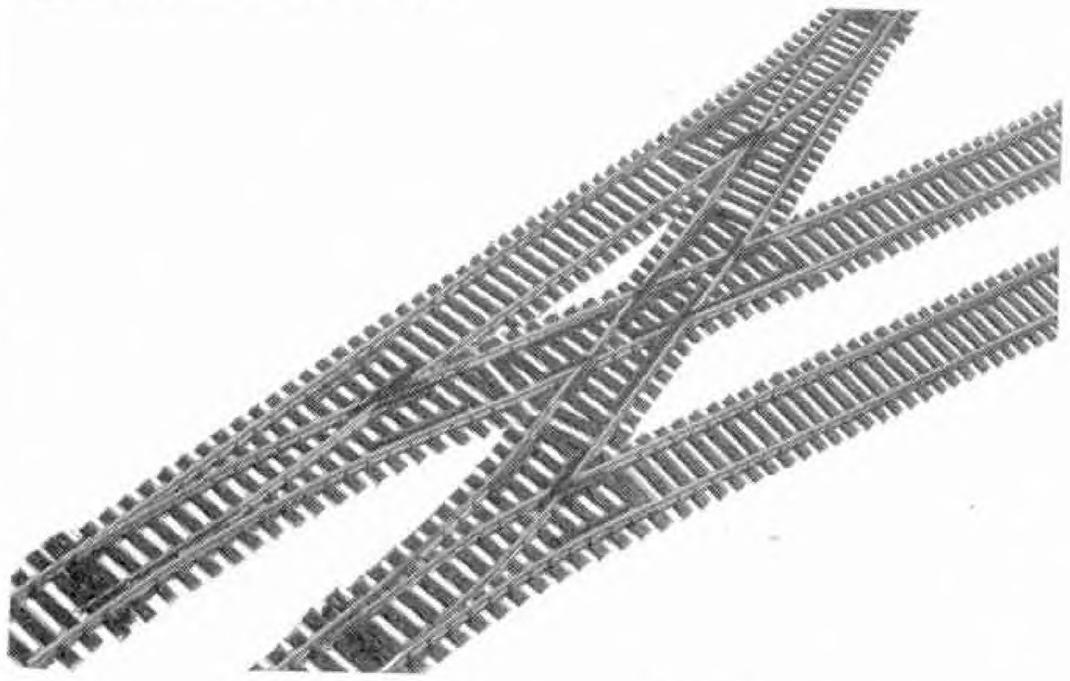
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It's here! Peco Streamline in the new 9 mm. gauge. In scale with standard 00 gauge, 009 is simply grand either as a "feeder" line in your layout or as a completely separate system. Amazingly realistic in appearance with authentic "random" sleepering, this new Streamline track is quite thrilling. Wonderfully flexible like all Streamline track, it can be curved with ease to match the tight turns and twisting normal in narrow gauge working. See it and you'll start making plans! It's terrific (in a small way of course).

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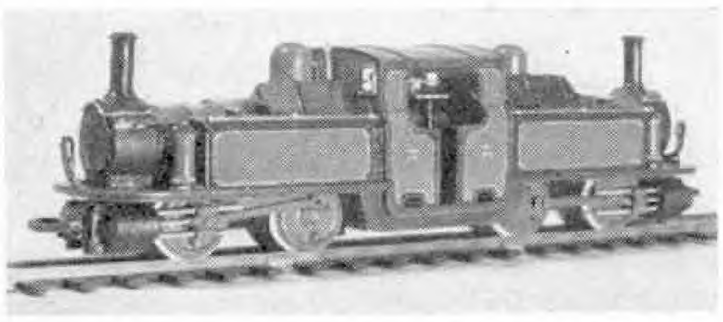
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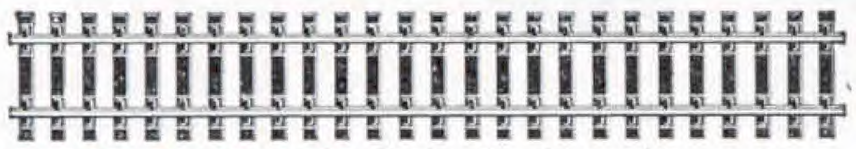
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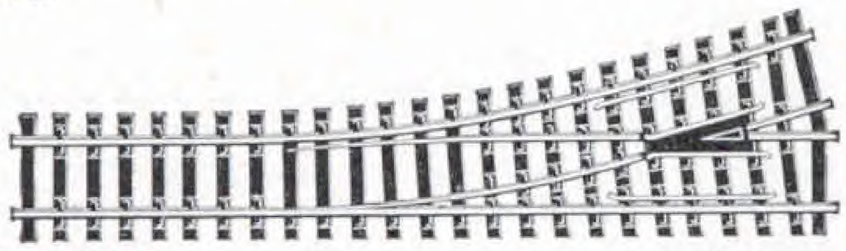
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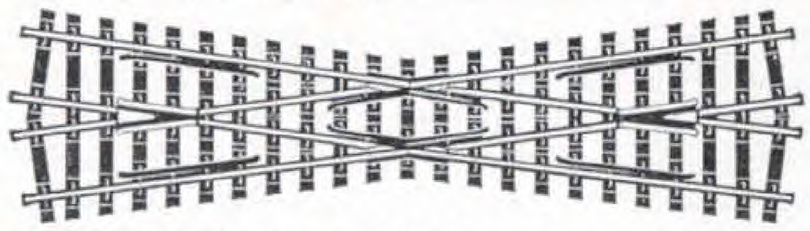
just look at this superb range!



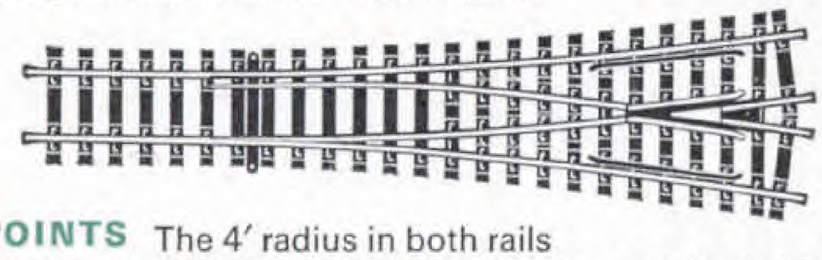
FORMOWAY TRACK Truly flexible without stress or distortion. Can be laid without cutting or preparation. Rails and sleepers exactly match Formoway pointwork. Per yard 5/11d.



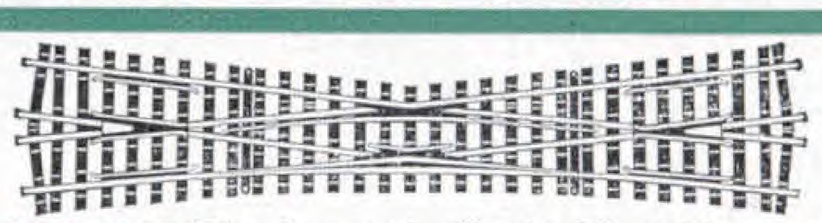
TURNOUTS L.H. and R.H. in 2′ and 3′ radii. Two L.H. points for a 'Trailing' crossover, two R.H. points for a 'Facing' crossover maintaining strict 6′ way between tracks. 2′ radius 8/6d. 3′ radius 10/6d.



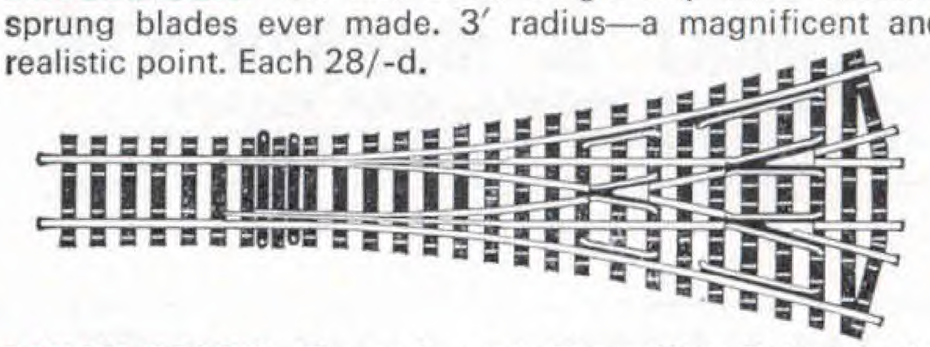
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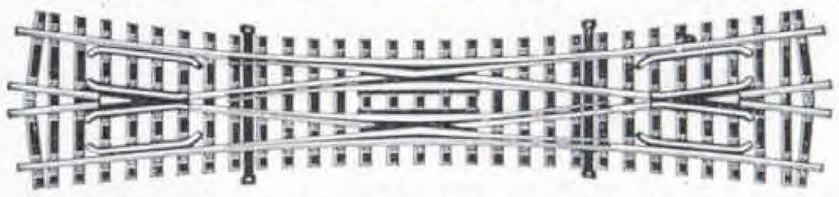
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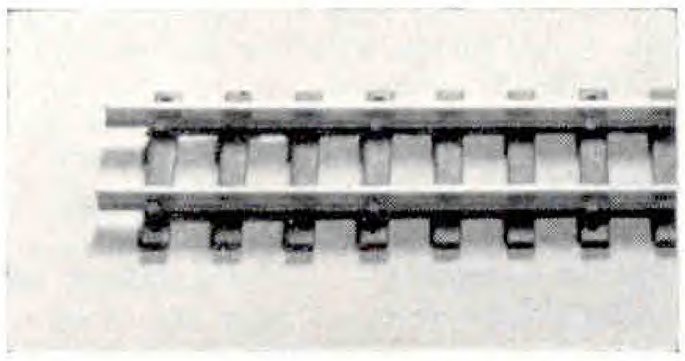
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● Track Key

A Tri-ang (fine wheel standard)
B Tri-ang (old wheel standard)
C Trix (new standard)
D Trix (old standard)
E Scale B.R.M.S.B.
F N.M.R.A. Standard
G Lone Star
H Arnold Rapido
I Eggerbahn
J Minitrix
K Tri-ang TT-3
L Hornby-Dublo
M Marklin
N Rivarossi
O Fleischmann
P Graham Farish
Q Continental TT

The selection of a flexible track to suit your own particular requirements can be a confusing business — there are so many different makes.
In this, the second of three special Meccano Magazine railway features, MIKE RICKETT sets out to help you to

GET THE BEST OUT OF FLEXIBLE TRACK



● Wrenn Track Manufactured by G. & R. Wrenn Ltd., Bowlers Croft, Basildon, Essex.

OO Track Manufactured in both two and three rail versions, a universal track with high section flat bottom rail 3·12 mm. high, available in either nickel silver or galvanised steel. Supplied with a $\frac{1}{16}$ in. thick black fibre 78 sleepers-to-the-yard base, drilled ready to receive fixing pins, the rail is fixed to the sleeper base by clenched chairs every four sleepers. Fishplates or rail joiners are not supplied, but are available separately. The track can be curved to any radius down to approximately 13 in., by cutting the fibre base at appropriate intervals along one side.

Price Nickel silver 6s. per three foot length.
Galvanised steel 4s. 11d. per three foot length.

Points Built with all-metal universal switched frog, spot welded on to two rivets in the sleeper base. The rail is fixed in a similar manner to the track. Dummy metal check rails are provided to enhance the appearance of the point. No point motor or lever is provided, but the tie bar is drilled ready to receive connecting spring wire or lever. The points are not wired or bonded electrically, but two gaps are included for isolation purposes beyond the frog. Rail joiners are available separately and are not attached to the points.

Will accept A, B, C, D, L, M, N, O, P.

Points available 15 in., 24 in., 36 in. radius both left and right hand; 14 in. from 32 in., and 24 in. from 36 in. curved points both left and right hand; scissors and normal crossover, the latter in both left and right hand, and both with fixed or switched crossing; switched diamond crossing; 15° and 30° diamond crossing; and a Y point, all available in either two or three rail.

TT Gauge Track A universal track with nickel silver flat bottom fine scale OO rail 2·78 mm. high. Supplied with a $\frac{1}{32}$ in. thick 118 sleeper black fibre base, drilled at intervals ready to receive fixing pins, the rail is fixed to the sleeper base by clenched chairs every four sleepers. The track can be curved to any radius down to approximately 12 in. once the sleeper webbing is cut at appropriate intervals. Fishplates are not supplied, and are available separately.

Price Nickel silver 5s. 3d. per three foot length.

Points Supplied with all-metal switched frog with cast V section, the range of points will accept all TT wheel standards. No method of motorisation is included, but provision is made for a point motor or lever spring connecting wire, by holes drilled in the point tie bar. The points are not electrically bonded or wired, but isolating gaps are left beyond the frog. Fishplates or rail joiners are not supplied, and are available separately.

Will accept K, Q.

Points available 18 in. and 12 in. radius points both left and right hand; 12 in. from 30 in. curved point; crossover and scissors crossover; diamond crossing; and a 90° crossing.

● Formoway OO Track Manufacturer: Graham Farish Ltd., Romany Works, Holton Heath, Dorset.

OO Track A ready-flexible track system with nickel silver flat bottom rail 2·75 mm. high. Mounted on a brown plastic sleeper base, the track needs no cutting or sawing, and is curvable down to a radius of approximately 12 in. The rail is fixed to the sleeper base by simulated chairs on each of the 117 sleepers, which do not include holes for fixing pins. Fishplates or rail joiners are not supplied, but these are available separately.

Price 5s. 11d. per three foot length.

Points The plastic frog fitted is cast into the point sleeper base and is coloured silver on its upper surface to present a uniform appearance. The check rails are also moulded in plastic, but are not coloured on their upper surfaces. The nickel silver rails are fixed on to the $\frac{1}{16}$ in. thick plastic base by simulated chairs on every sleeper, except on the switch rails where, to ease the tension, a number of chairs have been omitted. On the smaller points, the tension is such that only one type of point motor—the H. 7 M.—can be used. The point can also be operated by a point lever, or on the wire and tube method. The two rails beyond the frog are bonded electrically to give the correct polarity, and this avoids any separate switching through the point blades. All parts of the point are therefore live, and isolation of the two tracks leading off the point behind the frog is achieved by a nylon fishplate and an S.P.S.T. (on/off) switch. The plastic tie bar has two holes drilled for the connecting spring wire. These holes can in time become elongated, although it is understood that a metal plate is to be added in the near future which will eliminate this possibility. No fixing holes or fishplates are supplied, but in the case of the latter, are available separately.

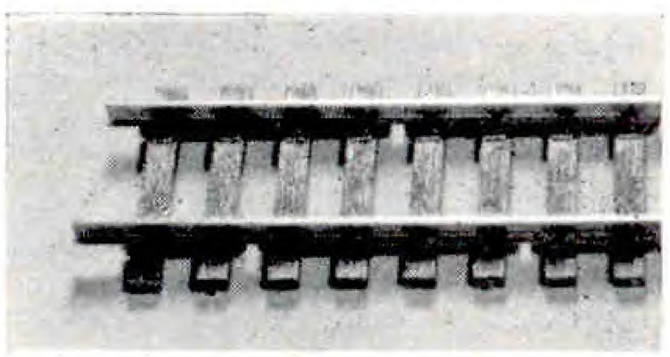
Will accept C, E, F, L, M, N, O, P.

Points available 24 in., 36 in. radius, left and right hand; Y point; 24 in. from 48 in. curved point, left and right hand; 15° diamond crossing; single slip; three-way point; double slip.



● Streamline Track Manufacturer: The Peco Patent Product Co. Ltd., Pecoway, Seaton, Devon.

OO Track A ready flexible track system with 130 sleepers to the yard making it especially suitable for Continental and American layouts. Sleepers have wood graining moulded on, and



they are made from brown resilient plastic. The flat bottom rail, fixed to the $\frac{1}{16}$ in. thick base by simulated plastic chairs, is 2·58 mm. high and is available in both nickel silver and brass. Its sleeper base needs no cutting or sawing, and is curvable down to approximately 8 in. No fishplates are supplied, but metal ones are available separately.

Plastic fishplates are also available for insulating or sectioning purposes. No fixing holes are provided, and the track is intended to be glued to the underlay system available separately.

Price Nickel silver 6s. per three foot length.
Brass 5s. 3d. per three foot length.

Points A universal point system with grained wood sleepers and simulated chairs holding the rails in position, except for the frog where the rails are moulded into the plastic. The range of points are automatically isolating by the switch contacts built into the point blades. The points are also electrically bonded through the sleeper-base, and the cast metal switch rails pivot to reduce the tension. No point lever is required because of the integral springing arrangement in the tie bar, but the special point motor made by Peco *can* be fitted on to the specially designed tie bar. Although basically a plastic frog, the rails are moulded in, reducing the length of electrically dead rail. No fixing holes are provided, and fishplates are available separately.

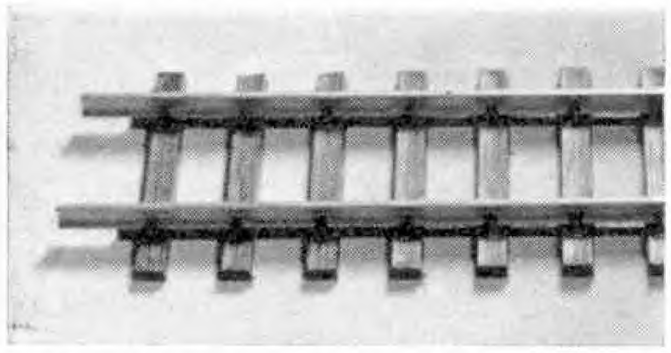
Will accept A, B, C, E, F, L, M, N, O, P.

Points available 24 in. radius left and right hand; Y point; and 24° crossing.

● Gem Flexi-Track

Manufacturer: George E. Mellor, Rhos-on-Sea, North Wales.

OO Track A plastic base track with 102 sleepers to the yard. Although it is flexible to a slight extent, the base has to be cut on alternate sides for curves smaller than six foot radius. The sleepers have simulated wooden chairs holding the rail in position, and wood graining



is also shown. The nickel silver flat bottom rail is 2·58 mm. high, and suitable rail joiners are available separately. No fixing holes are provided.

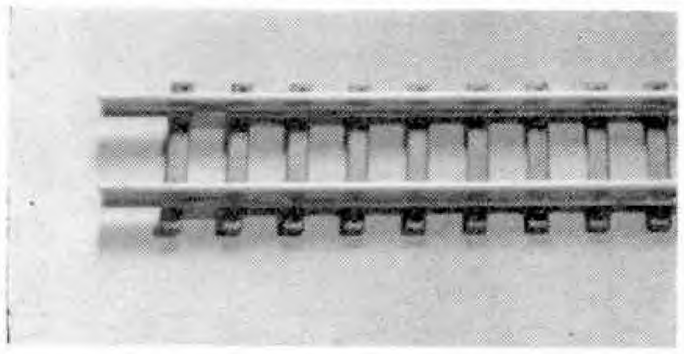
Price 5s. 11d. per three foot length.

Points Plastic base points with nickel silver stock rails and nickel plated die cast switch rails and frog. The all-metal frog ensures positive electrical continuity throughout its length, and the bonding of rails is unnecessary. The electrically live frog requires insulating gaps when current is fed in at the frog end of the point. Sidings are, however, automatically isolating, current being switched by contacts beneath the point blades. The frog and switch rails are fixed to the sleeper base by three metal rivets, and the stock rails are joined together by two connecting pieces of cast metal—the upper surfaces of each, and the lower surfaces of the frog being given a coat of black paint. The check rails are moulded in plastic on the sleeper base, and the plastic tie bar has two holes for the connecting spring wire of a point lever or motor. The two holes are protected against wear by metal eyelets. No fixing holes or fishplates are provided, but the latter are, however, available separately.

Will accept A, B, D, E, F, L, M, N, O, P.

Points available 2 ft. 8 in. radius left and right hand.

TT Track A flexible track system using $\frac{1}{32}$ in. thick black fibre sleeper base and 2·35 mm. high nickel silver rail fixed on to the sleeper base by clenched clips



every $1\frac{3}{4}$ in. For the track to become flexible, the sleeper-base has first to be cut at intervals either on alternate sides or along one side only. The base has 144 sleepers with two holes in each sleeper for fixing down. No fishplates are provided for the flat bottom rail, but these are available separately.

Price 5s. 6d. per three foot length.

Points The range of points have die cast switch rails and a frog soldered to rivets in the fibre sleeper base. The frog is similar in operation to the GEM OO point, and being electrically live, requires insulating gaps if current is fed in at the frog end of the point. Sidings are automatically isolating on the action of the switch rails, which rely for electrical continuity on the contact of the switch rails with the outside stock rails. The switch rails, which pivot on an eyelet rivet in the centre of the point, are riveted to a fibre tie bar which has two holes for the point lever or motor spring wire. Fixing holes are also provided at the tie bar end of the point. Nickel silver check rails are provided, and these are soldered to rivets set in the base. No fishplates are provided.

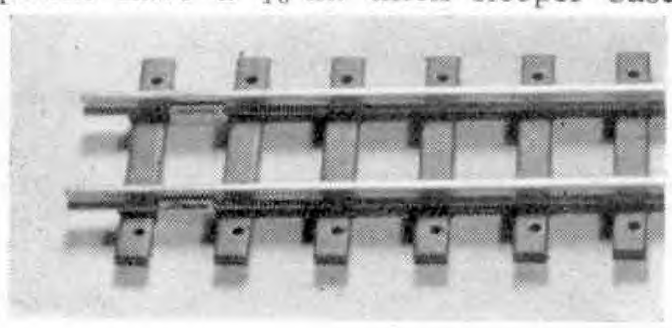
Will accept K, Q.

Points available 15 in., 24 in., 36 in. radius left and right hand; Y point; 24 in. symmetrical point; diamond crossing; and 15 in. from 24 in. curved point.

12mm. N/G Track A track system for 12 mm. narrow gauge layouts using the same rail as the TT track, but with a black fibre sleeper-base $\frac{1}{16}$ in. thick, with 91 sleepers to the yard. As with other fibre track systems, it is necessary for the base to be cut at intervals before the track can be curved, down to an approximate minimum of 15 in. Fixing holes are also provided on every sleeper, and the rails are fixed to the base by clenched clips every $2\frac{1}{4}$ in. Fishplates are not supplied, but are identical with those used for the TT track.

Price 5s. 6d. per three foot length.

Points Similar to the GEM TT points in operation, the narrow gauge points have a $\frac{1}{16}$ in. thick sleeper base



with an all-metal frog to give continuous electrical contact between wheel and rail. The frog end of the point is soldered on to staples set in the fibre base—rivets being used at the other end of the point. Electrical switching is done by the point blades making contact with the outside stock rails, so that sidings automatically become dead when the point is switched in the opposite direction. Insulating gaps are needed beyond the frog if current is fed in at that end. Fixing holes are provided at the switch rail end of the point, and two holes in the fibre tie bar allow the point lever or motor spring wire to be connected. Standard GEM TT fishplates are used for the track system.

Will accept K, Q. Also wheels in the GEM 12 mm gauge kits.

Points available 24 in. radius left and right hand.

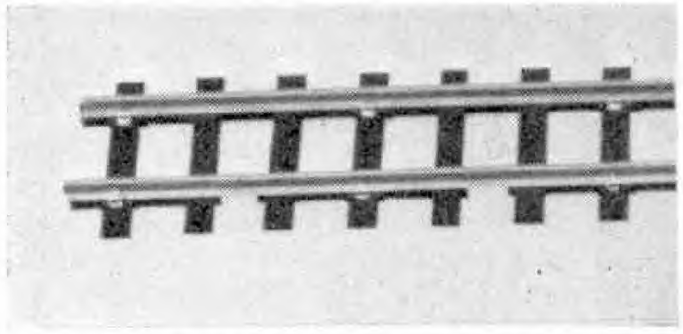
● Welkut Track

Manufacturer: Welkut Models Ltd., 107 High Street, Croydon, Surrey.

OO Track A fibre base system manufactured in both two and three rail and completely universal. The 2·75 mm. high flat bottom nickel silver rail is fixed to the $\frac{1}{32}$ in. thick 96 sleeper fibre base by metal clips every three sleepers. It does not have fishplates provided, but these are available separately. The track is not really flexible, and the base must first be cut.

Price Two rail 5s. 3d. per three foot length.
Three rail 6s. 11d. per three foot length.

Points A completely universal point system, using a $\frac{1}{32}$ in. thick fibre base with clips every three sleepers for fixing



the rail. A fixed plastic frog $\frac{3}{4}$ in. long is provided, and electrical bonding from the point blades, which are pivoted by Electrical switching is effected through the point blades, which are pivoted by two clips in the sleeper base. No point motor or lever is provided but fixing holes are drilled in the tie bar, which has the switch rails soldered to rivets. Dummy check rails of metal are fitted for appearance purposes.

Will accept A, B, C, D, E, F, L, M, N, O, P.

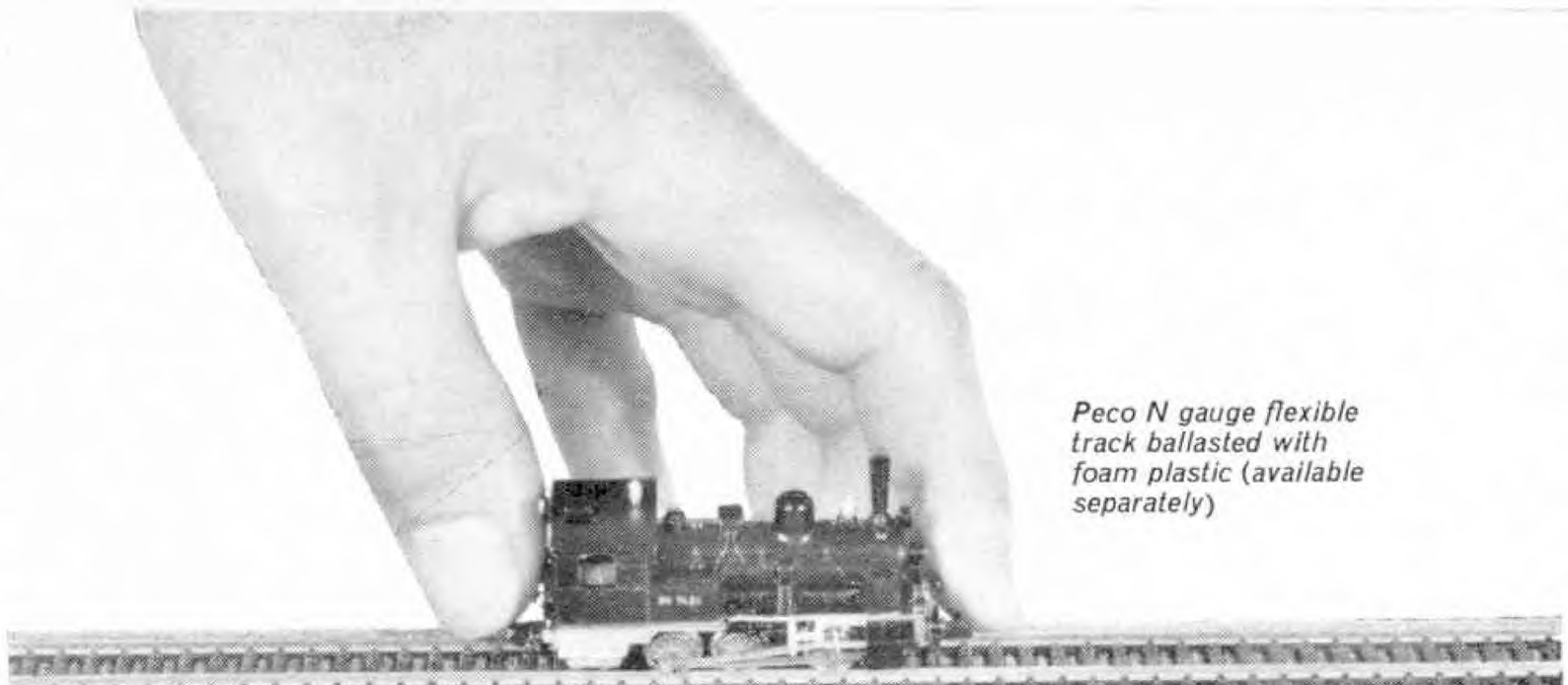
Points available In both two and three rail. 30 in. radius left and right hand; 18 in. from 36 in. curved points, left and right hand; Y point; facing and trailing crossover; diamond crossing; double junction.

TT Track Identical with the Welkut OO track except for the sleeper size and rail size, which is finer.

Points Identical with the Welkut OO track except for the sleeper size and spacing, which is finer, and also the size of the rail.

Will accept Q, K.

Points available 18 in. radius, left and right hand.



Peco N gauge flexible track ballasted with foam plastic (available separately)

USING FLEXIBLE TRACK

MOST experienced railway modellers can trace their first efforts in the hobby to a train set, subsequently enlarged by a loop or a few sidings to make the basic oval of track more interesting. Enthusiasts still follow this system of layout development, and the track—whether bought with the train set or acquired at a later date—is used to form the now familiar oval of track with a loop and a small number of sidings. Invariably the first simple layout is built up from the sectional track supplied by the manufacturer of the set or equipment, and it is not long before all the operational possibilities of this first design have been explored, and something a little more ambitious becomes necessary if the interest in the model is to be maintained.

Although it would be grossly unfair to deny that many interesting layouts can be built with sectional track, its very nature does restrict the serious enthusiast. The alternative, open to anyone owning a permanent layout mounted on a baseboard—especially if he is interested in the more practical aspects of model railways—will provide many hours of enjoyable creative work.

In addition to the sectional rails supplied with train sets, a number of flexible track systems are produced for use in conjunction with, or independently of, the sectional systems. The latter have the advantage of simplicity and reliability, both very important where beginners are concerned, and ideal for giving the experience that is necessary in track laying before more complicated systems are tackled. The degree of realism that can be achieved with sectional track is restricted because of the fixed radii curves and rails of fixed lengths. Flexible track has the great advantage of being curvable to any radius, and most of those available are completely universal, allowing trains of any make to run on the one track system. A greater range of points are usually available and the track itself is sold by the yard, which is cut to length as required.

The type of layout that can be built with a flexible track system is virtually unlimited, but when beginning, it is better to build a relatively simple layout that can be extended at a later date, such as that illustrated in Fig. 1. Mounted on a six foot by four foot baseboard, one of the most popular sizes in general use, the plan offers reasonable scope for both operation and scenic development, and its cost would not be too prohibitive. It would in fact be well within the budget of anyone beginning to build a model railway.

Shown in the first or basic plan, is a passing station with an island platform, and a footbridge to the station building set apart from the platform. A small but self sufficient goods yard adds interest to the station and one long storage siding is included to allow an extra train to be held on the layout. Two gradients, rising to a summit $1\frac{1}{2}$ in. above baseboard level at the back, give a gradient of approximately 1 in 30. This serves the double purpose of increasing the interest of driving trains and also allows the extensions that are necessary for the second plan, to be built.

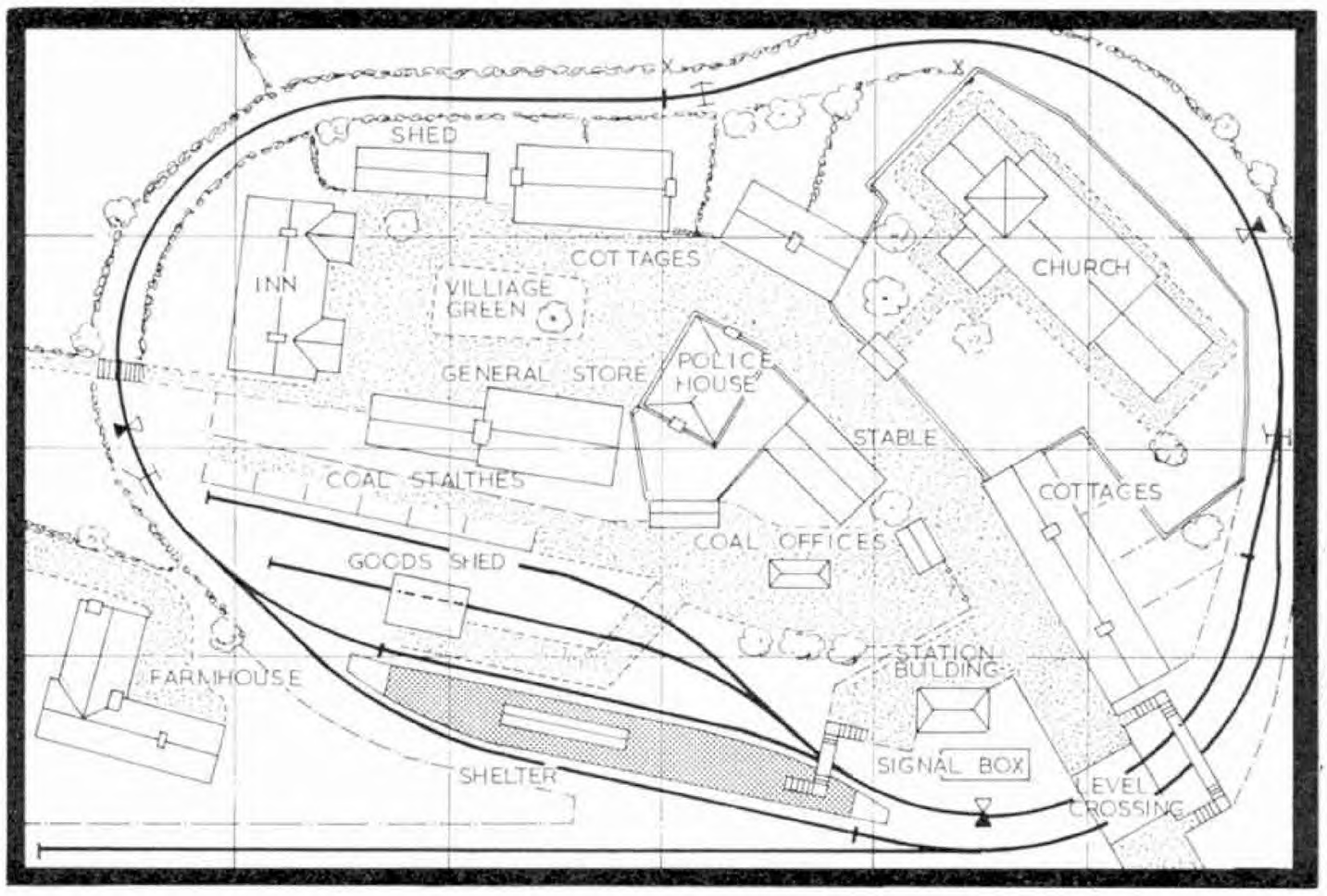
When the first layout is complete the section X-X on the first plan can be removed, and a new high level section, including a passing loop, added. The two passing loops that will then exist, will allow two trains to be run simultaneously, both passing each other at alternate stations. Two controllers would, of course, be required for this operation, and the layout would need to be wired and sectioned as shown in the plan.

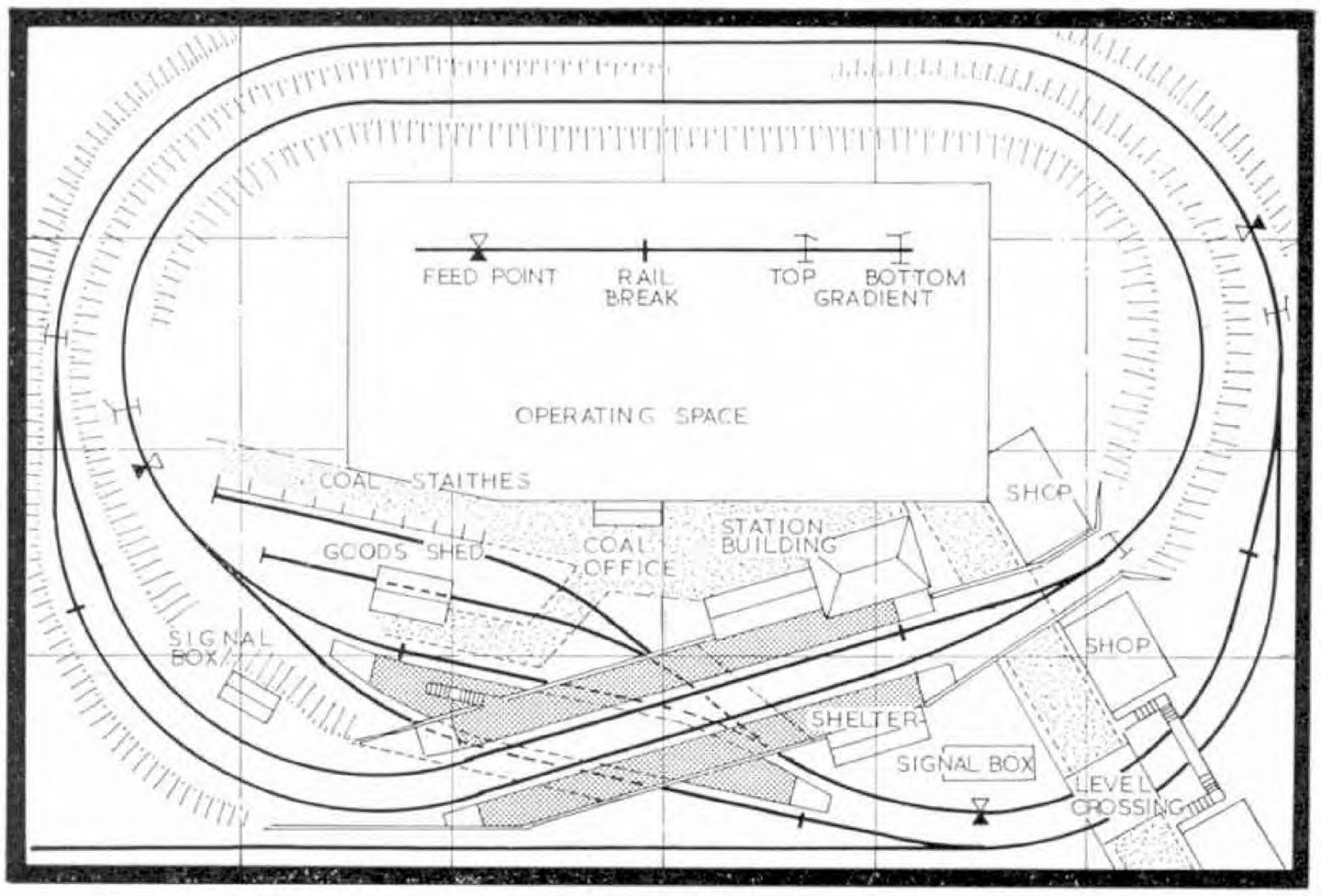
The second plan features an operating space instead of the village in the first plan, and although the village is a pleasant scenic adjunct it would be virtually impossible under certain circumstances to reach parts of the track—for instance if the layout were pushed up hard against a wall. Another factor which is an important argument in favour of the operating well is that when the trains run around the operator the journey made appears to be longer.

The scenery on the completely covered layout would be more comprehensive because of its very nature and would have to be more skilfully done to avoid a tail-chasing effect. The important parts are the station buildings, signal boxes, goods shed and coal staithes. All these are essential and should be placed in the positions shown, or as close to this as possible. Non-railway scenery on the second plan would be simpler and easier to build, although the scenery on both layouts could be modified to suit individual tastes.

The first plan features a village which has the misfortune to be served by only one road—presumably why the rail connection was so essential! This, how-

A simple layout that can be built with flexible track and measuring only 6 ft. × 4 ft.
A less scenic development of this is shown on page 26





A development of the plan shown on page 25 including a second level and an operating well

ever, shows how much space is really needed for such a small village, which is why the second plan would be an improvement with only the merest suggestion of a village. If, however, you enjoy modelling buildings, and choose to include the village, include the more important items such as church, pub, general store, police station, a few cottages, and one or two other buildings to give a representation of the sort of village you want. The church is rather large, but is about scale size for an accurate model.

In the second plan, the problem that besets all six foot by four baseboards becomes apparent because of the proximity of the two stations. It is, therefore, better to pretend that both are really one station with two levels, and to provide a number of stairs and subways for access and interchange. The same trains will of course serve both levels, and this is unfortunately unavoidable.

Since only flexible track can be used to build this type of layout, the different radii curves no longer present a serious problem, although it is desirable to include curves of as large a radius as possible. The plan uses an absolute minimum of 15 in., although a number have been eased to 18 in. and 20 in. The points are 24 in. radius throughout, and for the layout in its final form you will need three right hand, three left hand, and one Y point with about seventeen yards of flexible track. The estimation of track can only be approximate, for with flexible track, much depends on how economically you cut it. If you cannot afford to buy this amount of material at one time, omit one or two sidings or build the first plan and then extend to the second.

On the second plan, it is theoretically possible to add a crossover at the back of the layout, but this does not really improve the operation, and does not justify the cost of two points, particularly if motorised. It is possible to further extend from the second plan to a terminus built as a separate unit, accomplished by leading a track off the existing baseboard in an anti-clockwise direction, so that the long storage road could be developed as a terminal track with extra platforms. All electrical feeds and breaks are shown, and are of the absolute minimum. They also assume points of an isolating type.

This supplement includes a two page feature giving the basic characteristics of all the flexible track systems manufactured for the three main gauges—00, TT, N, and N/G—and I can only recommend that you study this and decide for yourself which system best suits your requirements. Whichever you choose, however, you will be faced with the problem of either scrapping your existing track, if you already have a large quantity, or of joining the two systems together. It is, of course, much better to adhere to one system wherever possible, but it is obviously undesirable to dispose of a quantity of sectional track when a considerable expenditure is involved, and so the effort of joining the different types of track is worth it.

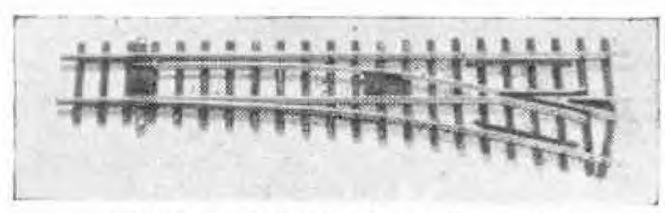
The best way of doing this is to arrange for as much of the sectional track as possible to be hidden in tunnels, and in other places where its appearance will not contrast too sharply with the flexible track. If the flexible track sleepers are thinner than those in the sectional track, these will have to be packed up until the two rail surfaces are level. This is most important and, in addition, it is always advisable to ensure that the gradient between the two track systems is not too great. Peco Streamline, Graham Farish, Gem plastic base, and Welkut track is similar in height to Hornby-Dublo—Peco N and Lone Star (although the two latter have thicker sleeper bases)—and Tri-ang to the Wrenn 00 track, the Tri-ang track having a finer rail, but a thicker sleeper base.

When joining track together in this manner, it is rarely possible to use any of the rail joiners available because of the different rail heights, although in the systems listed above, the differences are quite small and, with care, it is possible to file a six inch piece of rail from the flexible track in use to the correct height for the sectional track, or vice versa if the sectional track rail is higher. It is important that the rail surface between the two track systems is level, and it must always provide a smooth path for the wheels of rolling stock. When the rail has been soldered into position and you are satisfied, rub the upper surfaces of the joints with a needle file to smooth the surfaces off. It is, of course, important for any layout with joints of this type to be of a permanent nature and, therefore, fixed to a baseboard.

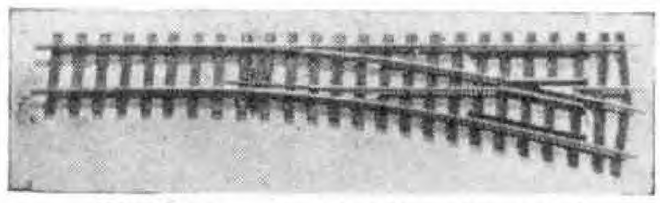
Laying Flexible Track

The tools used to lay flexible track are very inexpensive, and once bought will serve all manner of other purposes in the construction of the layout. The most useful is undoubtedly the backsaw, or razor saw, obtainable from most toolshops. Used to cut sleeper base on the fibre base track, the saw is also useful for trimming rail, and for cutting insulation gaps where insulating fishplates cannot be used. A fine needle file for smoothing rail joints and rail cuts is a useful addition to the tool box, and other tools that I would include, are two pairs of pliers—a square nosed pair, and a round nosed pair—a sharp modelling knife, a $\frac{1}{32}$ in. drill with pin vice or chuck, a hammer, and a pencil with a three or four foot long piece of string.

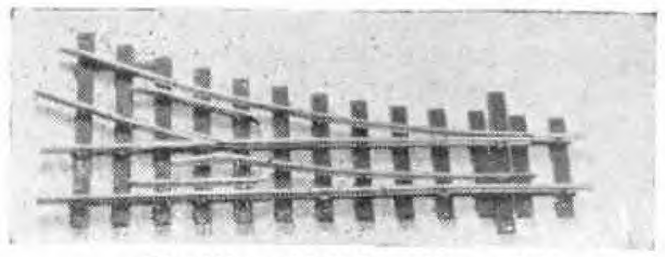
The first step, whether extending an existing layout, or building a new one, is to draw the plan of the layout full size on to the baseboard surface with a soft pencil or a piece of chalk. It is best to draw the plan out as accurately as possible, and to use a rule with a straight edge, and one or two of the points to be used. Remember when drawing the plan that it is much easier to erase a pencil line, than to completely re-lay a section



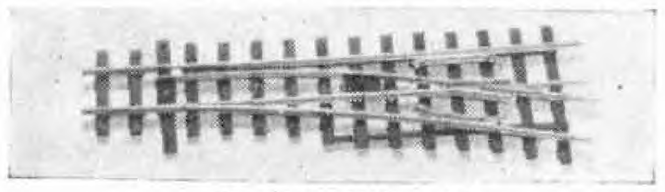
The Gem 00 2 ft. 8 in. radius point



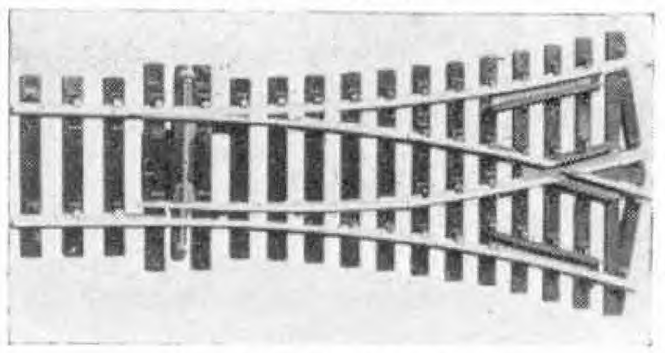
The Graham Farish 2 ft. radius point



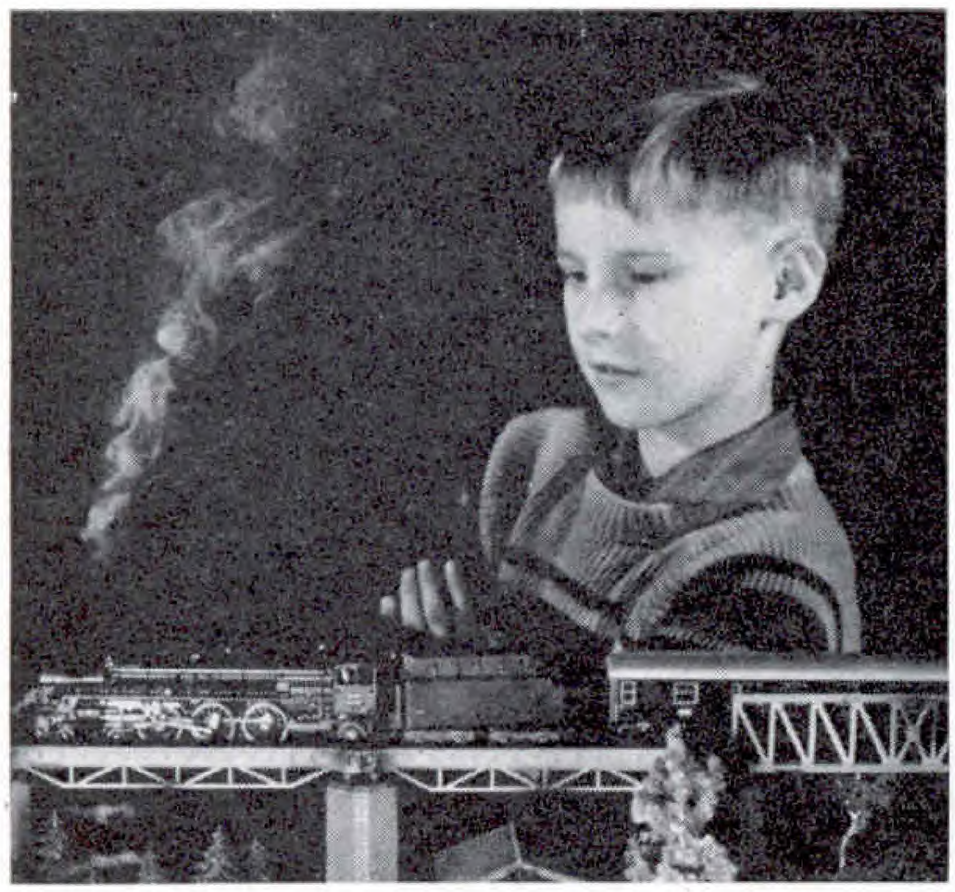
The Wren 00 2 ft. radius point



The Gem N/G point



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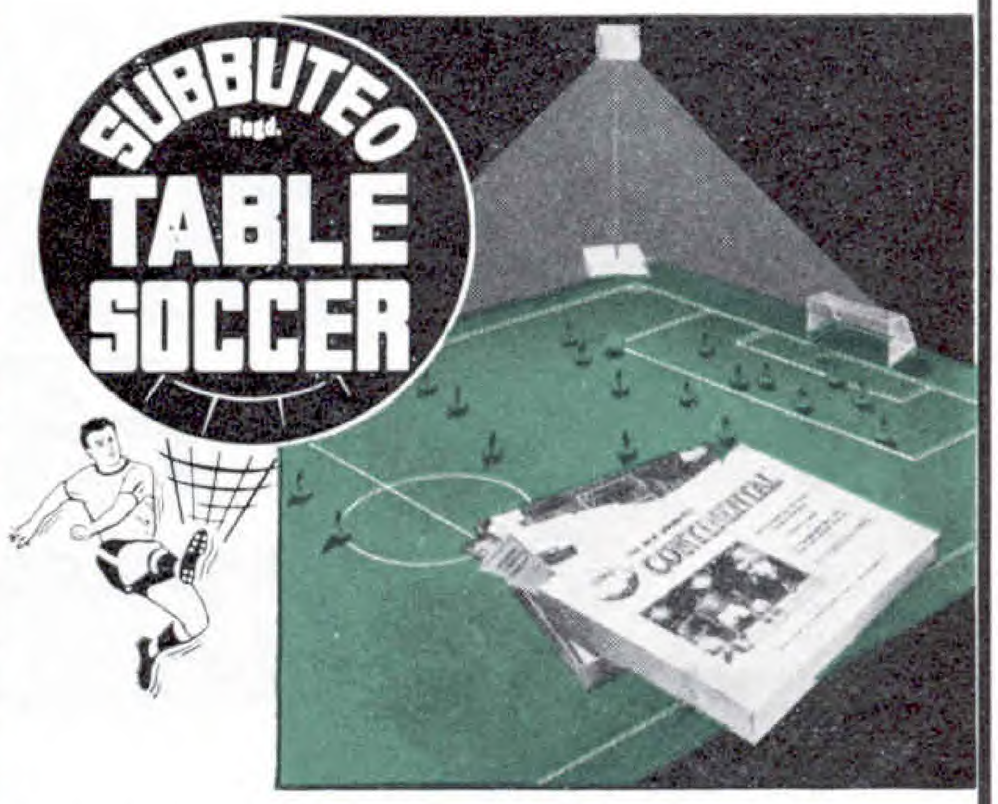
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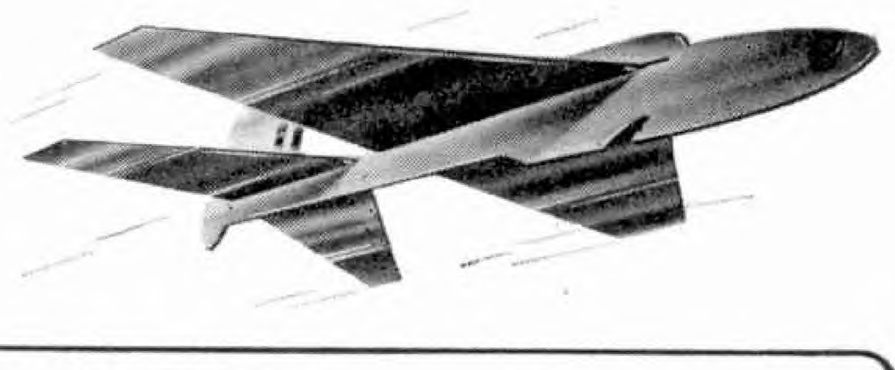
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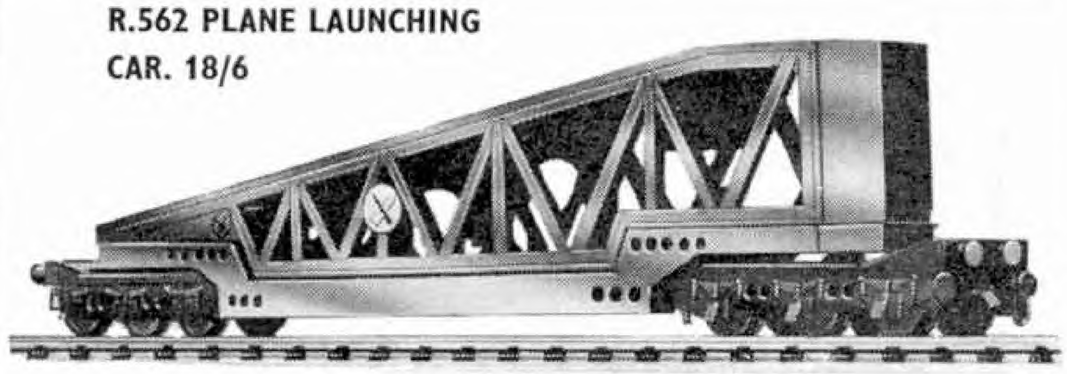
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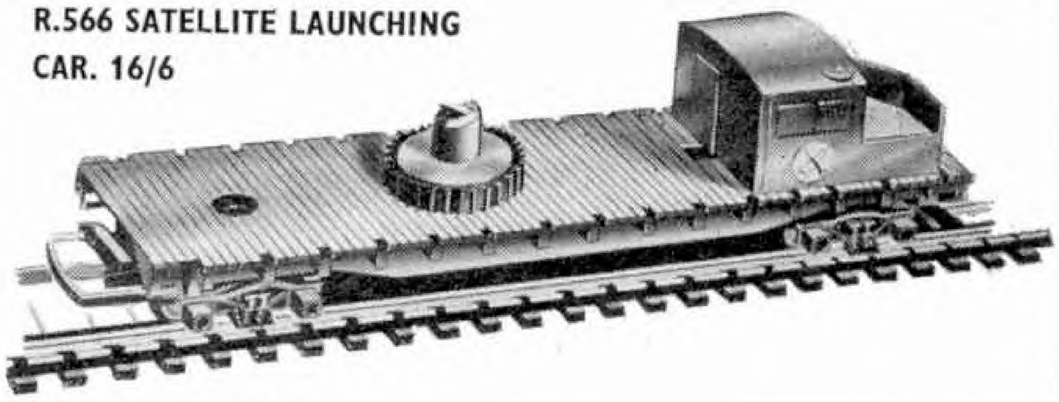


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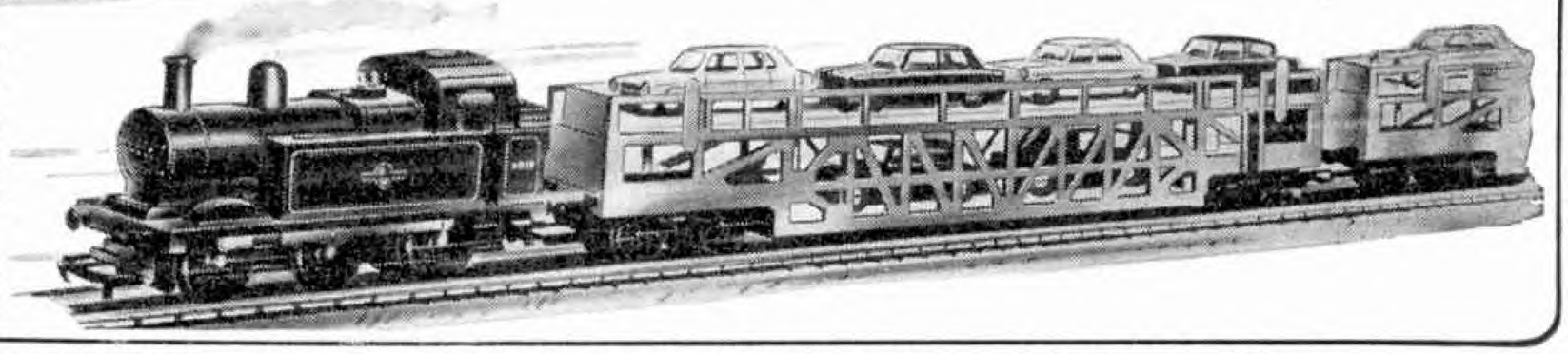


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of track. Curves especially, must be drawn with care, and a pencil with a piece of string knotted to the radius of the curve can be used, pinning one end down in the appropriate position and using the pencil to describe an arc of the correct length.

Once the plan is drawn on the baseboard, the track can be prepared, and the method of ballasting decided upon. Of the two general types of model ballast, the first consists of foam plastic, supplied by firms like Peco and Graham Farish, and the second, loose ballast glued to an underlay. Foam is probably the most popular among beginners, especially since it involves less mess and is quicker to use. It also differs from the other method in that it is laid *before* the track. Foam ballast is available in strips indented for each individual sleeper, and is usually boxed in 16 ft. lengths for straight and curved track, with specially prepared bases for points.

The foam is cut to length and glued into position on the baseboard as indicated by the chalk or pencil lines already drawn on. It can then be painted, if you wish it to be a different colour, and the track itself can be prepared. The ready-made flexible systems do not require their sleeper bases to be cut or altered in any way, but in a number of cases fixing holes must be drilled every nine inches or thereabouts. A $\frac{1}{32}$ in. drill and pin vice are used for this operation, and a suitable number of holes are drilled in the sleeper base. Drill the holes slightly closer together if the track is to be curved, and lengthen the interval for purely straight track,

Once all fixing holes are drilled, the track can be laid in position over the sleeper base, and pinned in position with half inch pins. If the baseboard is of the soft board type, the pins will push into the baseboard with a pair of pliers, but with the harder baseboards a hammer will be needed.

When flexible track is curved, the inside rail of the curve will be seen to protrude beyond the outer one, and this should be trimmed off with the backsaw. It may also be necessary to cut the track to length if only a portion of the yard length is required. This can also be done with the backsaw, either when the track is laid, or preferably before it is finally pinned into position.

In the case of the fibre track systems, the base will first have to be cut before the track can be curved, and this is done once again, with a backsaw. It is usually better to remove pieces of the base from the inside of the track curve and, depending on the radius of the curve, cuts should be made between every three or four sleepers. Once this has been done fixing holes can be drilled, and the track cut to length and pinned into position as before.

Using Ballast

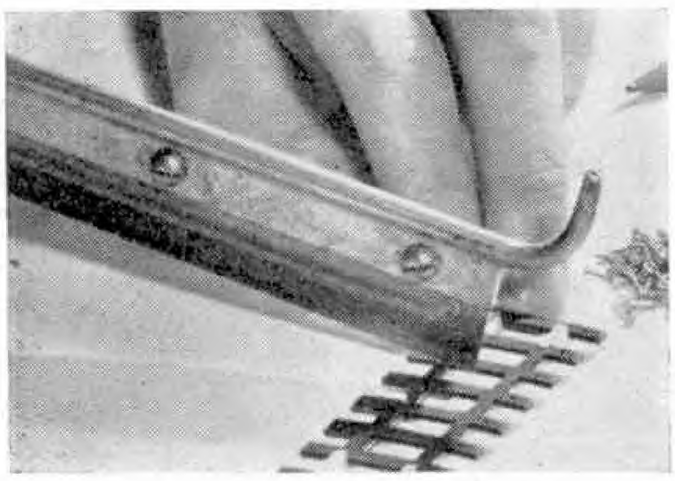
When individual ballast is involved, the track is laid last, but the webbing and fixing holes are cut and drilled as before. To reduce noise and to give a better appearance, it is better to first put down an underlay of either cork or any other substance that can be readily cut with a pair of scissors or a modelling knife, and then to lay the individual ballast.

The plan of the track layout should be duplicated on to pieces of $\frac{1}{16}$ in. thick cork—obtainable from most model shops—and then cut out and either pinned or glued to the baseboard according to use. Unlike the foam this cannot be curved, and it will be necessary for pieces of underlay to be cut at different radii from the sheet. It will, therefore, be advisable to plan the curves on the underlay very carefully to avoid unnecessary waste.

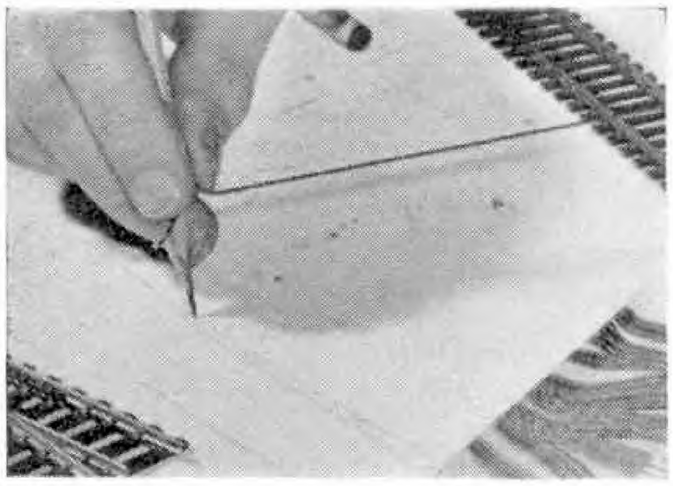
Glue is then spread over the surface of the underlay, short lengths at a time, and the track pressed and pinned into position. Ballast can be sprinkled over in liberal quantities, and the rail trimmed off with the backsaw. Do only short stretches of track at any one time and make sure that plenty of glue is applied onto the baseboard surface. I have always used a water base glue of the Casco type, which has the advantage of drying matt, and which remains wet for reasonably long periods. The remainder of the ballast can be brushed off when the glue has dried.

Points for both systems of ballasting are treated in the same manner and it is best to cut a piece of the ballast, whether foam or underlay, to allow the tie bar to move freely. In the case of the Peco Streamline points, a hole will have to be cut in the baseboard before the track is laid, to allow the motor to be clipped onto the underside of the point base. Fishplates or rail joiners can be added to both points and track after the rail has been trimmed to length, but before the loose ballast is added. It is usually easier to fit the fishplates before the track is pinned into position, and it should be decided beforehand if nylon fishplates are required for section breaks.

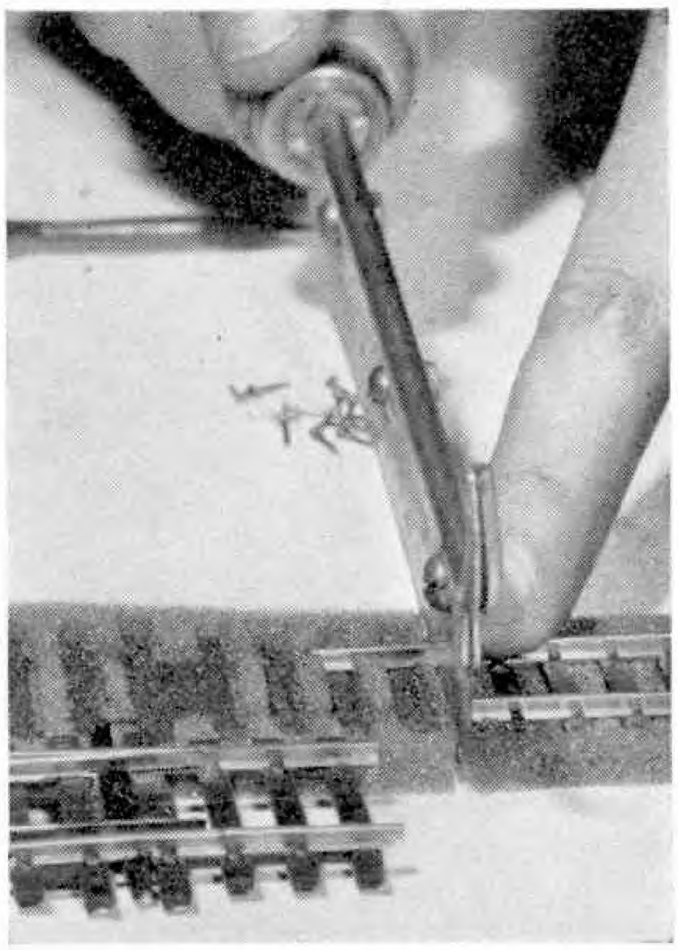
Once the loose ballast has been laid, the whole track can be given a coat of thin paint of the appropriate colour to tone it down and "age" it, or it can, if you prefer it, be left alone.



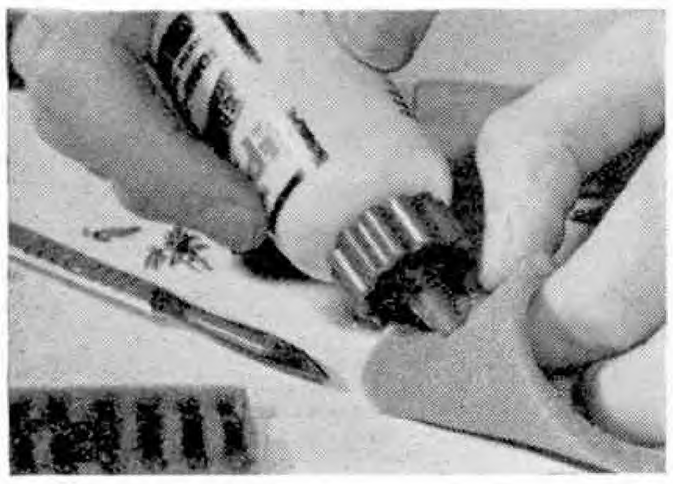
1 *The Gem N/G track, having its fibre sleeper base cut with a backsaw to allow the track to be curved*



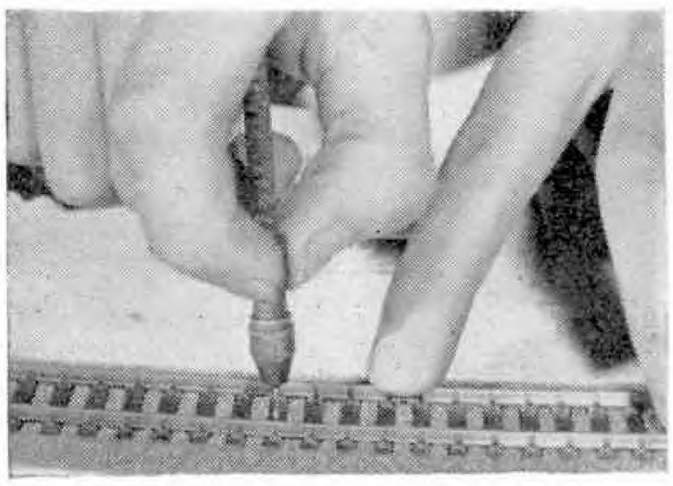
2 *The track design being drawn on the baseboard with a pencil and a 3 ft. long piece of string to give an arc of that size*



5 *One rail on a piece of curved flexible track being trimmed with the backsaw*



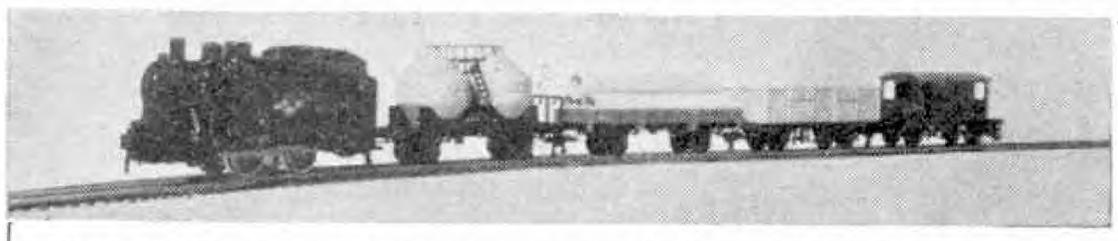
3 *The foam ballast having glue applied to its underside before fixing to the baseboard*



4 *Peco Streamline Track, having its sleeper base drilled to take fixing pins*

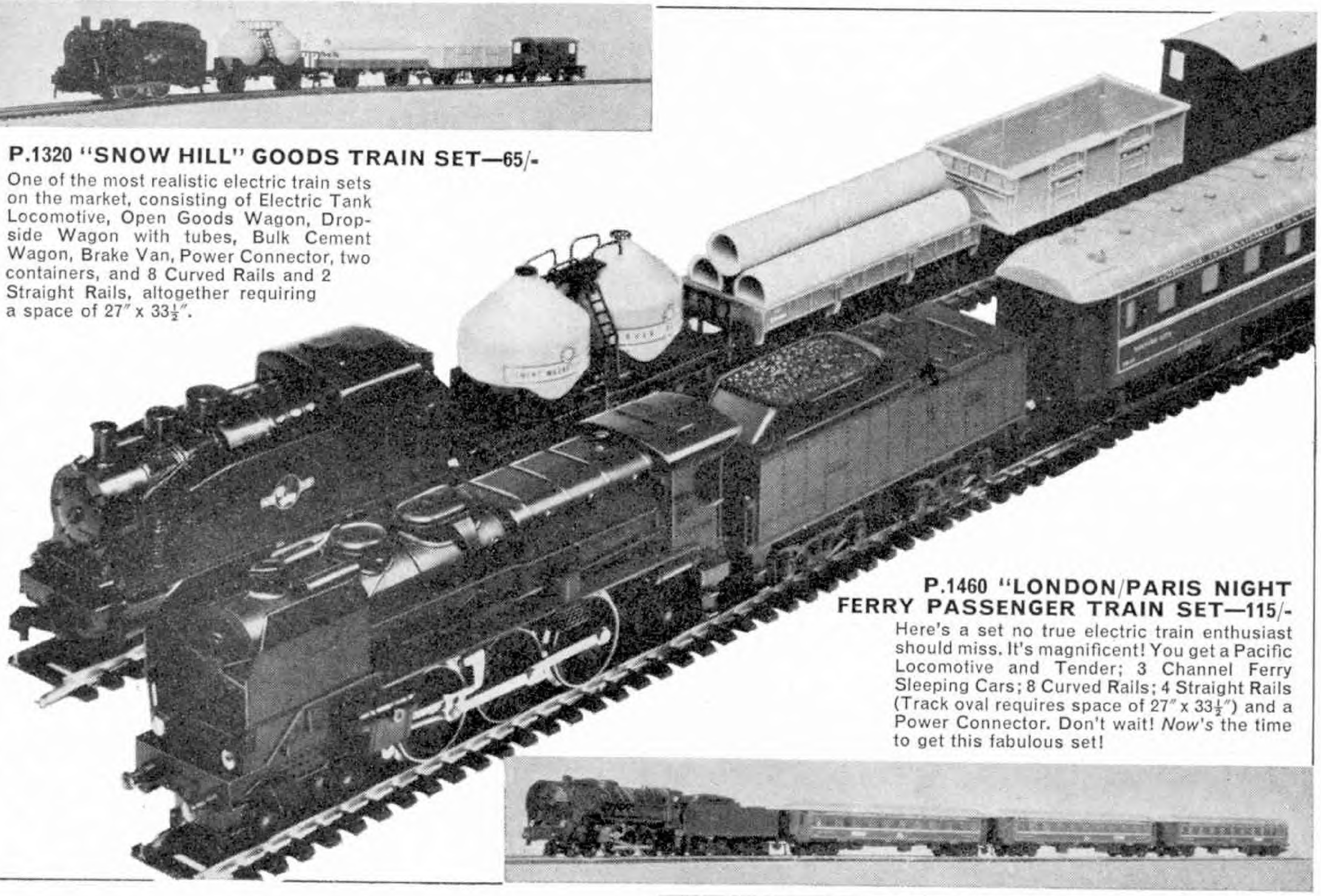
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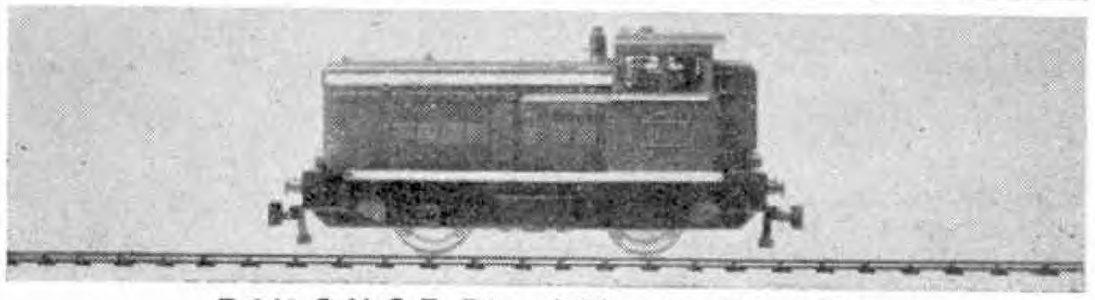
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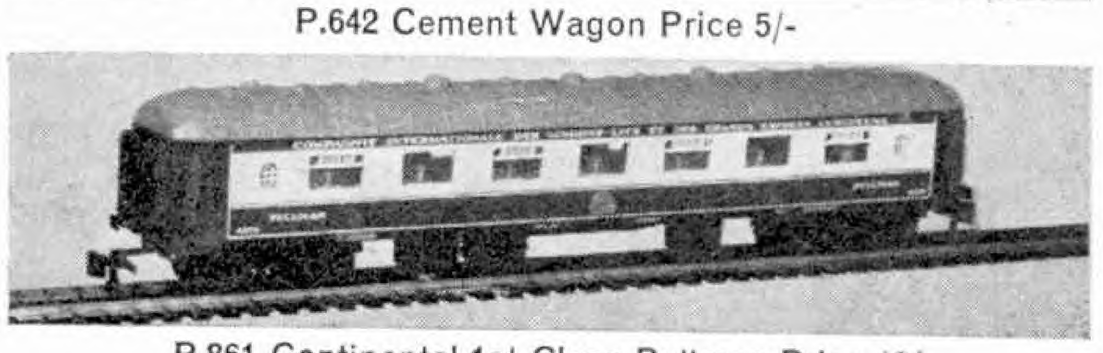
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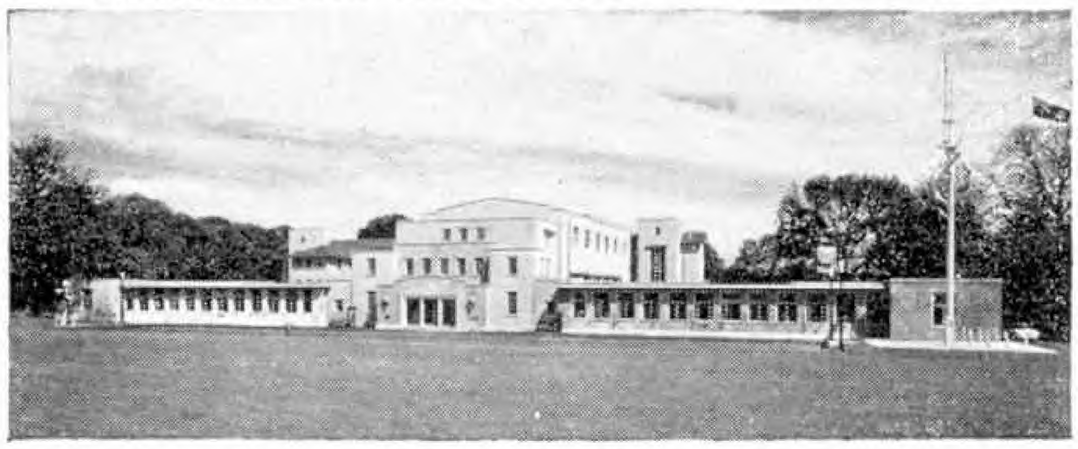
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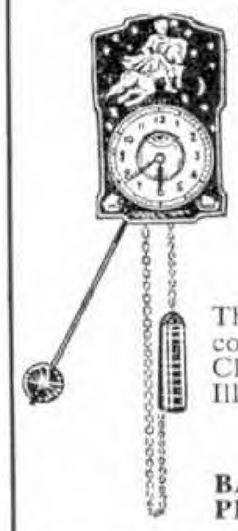
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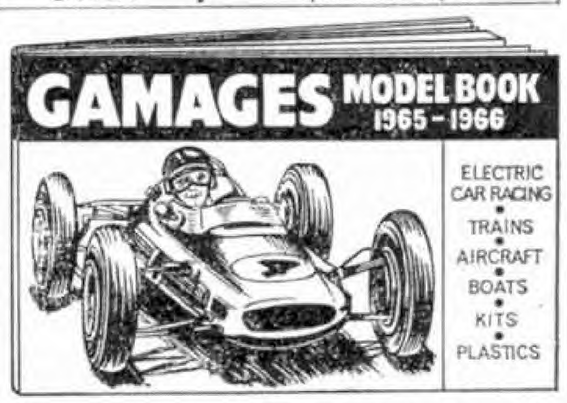
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by PITMAN

THAT WAS SCALEXTRIC AT THE NATIONAL MODEL SHOW

- 100 ft. laps to race
- Prizes to win
- New things to see
- New skills to learn

AFTER the first surge of visitors had settled down to the serious inspection of individual exhibits, it was very apparent that the giant Scalextric layout was to be the focal point of the 1st National Models Show at the Horticultural Hall.

A skill tester

Built specially for the Show, the layout measured 20 ft. by 15 ft. and consisted of a four-lane circuit with 100 ft. laps for each. It was by no means an easy circuit, fairly fast, having a 20 ft. straight for full throttle work, followed by a sharp right hand bend, then away to a left hander and a succession of 'esses' requiring very skilful driving, another left hand bend then over the flyover and a sharp righthander to the chequered flag. It was a most impressive layout; there is no doubt that properly laid out, Scalextric Model Motor Racing really looks and behaves like a raceway, the buildings and accessories are so

Proudly holding his prize for the day's fastest time, 14-year-old Simon Tomlinson of Beaconsfield poses for our camera behind the magnificent Scalextric exhibition layout



realistic that the whole atmosphere of real racing is captured.

A-prize-a-day

Every day a prize was given for the fastest time over one lap and our first winner was eleven - year - old Jonathon Fynes, of Highgate Village, N.6, who—being a very keen Scalextric enthusiast—gave us all his time after his win and did very valuable work throughout the Show acting as Steward.

Stirling Moss

Several contestants were interviewed on B.B.C. Radio and the maestro himself, Stirling Moss, paid a visit on the opening day. One outstanding visitor was from Thailand and he seemed to be at the show every day. He entered the Scalextric Open Championship on Saturday, much to the confusion of the announcer who had great difficulty in pronouncing his name—Somsakdi Uampornvanich. Somsakdi took this all in good part however and his wide grin was never far from the Scalextric layout.

The list opened on Saturday morning for entries for the Scalextric Open Championship and promptly at 3 p.m. the heats started.

Whilst the standard of racing was quite high, it was very obvious that the one thing which counts when driving on a strange circuit is practice. The heat winners, as they went into each next round, showed considerable improvement each time and by the time the finals were reached the handling was near perfect.

Fourteen - year - old Philip Gue of Hainault, Essex, was the overall winner and was presented with the trophy and Scalextric Set by Mike Flynn of Minimodels Ltd. Jonathon Fynes of Highgate Village was second and Somsakdi Uampornvanich, who is staying at Cricklewood, gained third place.

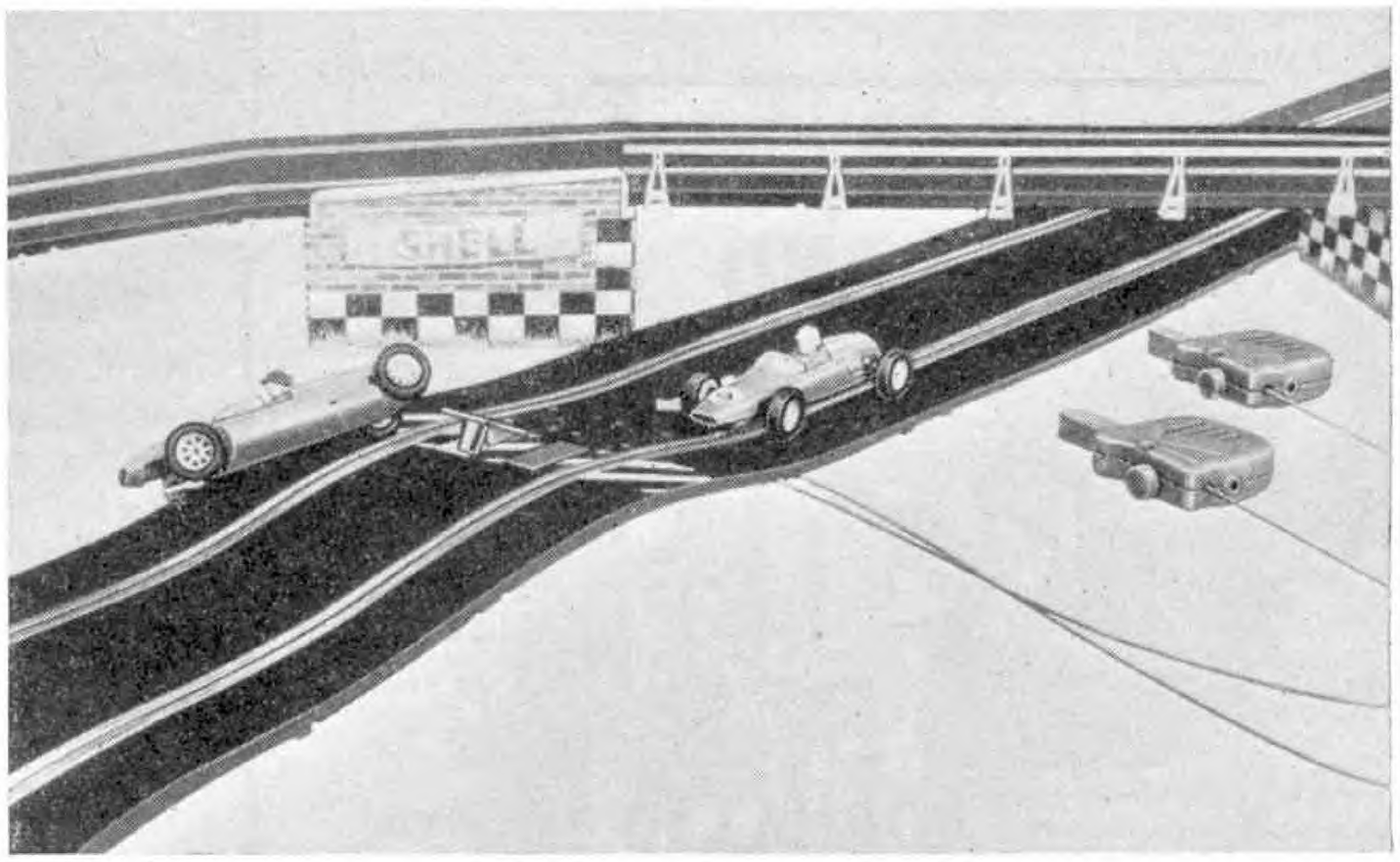
New

Scalextric, is always adding to the fun and excitement of model motor racing and its latest introduction is the BLOW-OUT Track Section, which simulates the effect of a burst tyre on a car travelling at speed. It consists of two flaps fitted alongside the slots operated independently by spring loaded controllers. Having set the flap spring which operates on your opponent's lane, the object is to attempt to release it so that his car leaves the track as if a tyre had blown out. This may sound simple to you, but I can assure you that it requires split-second timing, and bearing in mind that you are fully occupied in controlling your own car, and at the same time expecting the same treatment from your opponent, you can see that it is by no means easy. However, it is great fun and if you are unable to beat Dad in straight racing, at least you can completely fox him with the new Blow-Out Track—incidentally, it is in the shops now and costs 32s. 6d.



The B.B.C. were at the National Model Show too. Envious eyes look on, as two contestants are interviewed for a radio programme!

You've got to have your wits about you to use this new 'Blow-Out-Track' —but it could get you out of a desperate race situation!



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November

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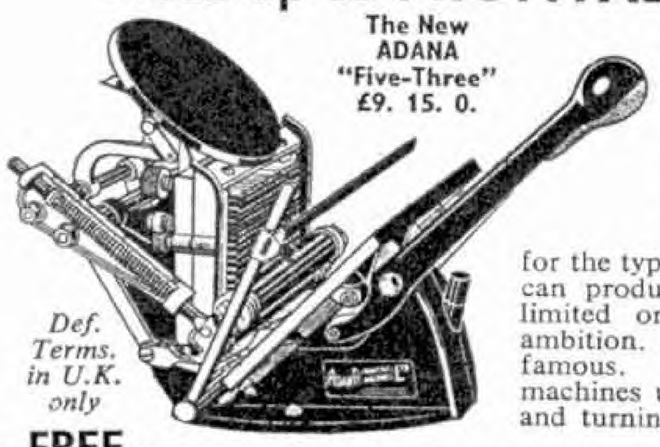
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WHEN TRAINS FOUGHT TO BEAT THE CLOCK

Like a Greyhound—eager to go—60034 'LORD FARINGDON' pulls out of Kings Cross with the afternoon 'Talisman'

IT is often interesting to speculate on the types of steam engine that would have emerged if nationalisation had not occurred in 1948 for, since the 1930's locomotive development of a remarkable and unexpected nature had produced designs vastly superior to anything previously produced for any British railway. The rivalry that existed between the four big railway companies also acted as a spur and was responsible for much of the progress of that time.

Powerful locomotives, streamlined trains, and broken speed records were the hallmarks of the period that preceded the war. Powerful personalities also controlled the locomotive designs of the four companies, and the engines produced by them, invariably bore the stamp of their individual personalities. The 'big engine' policy pursued by Mr. H. N. Gresley of the London and North Eastern Railway eventually led to the introduction of that most celebrated of locomotives, the A 4 Pacifics. 'Mallard', one of this class, broke all existing records with its phenomenal speed of 126 m.p.h.—a record that still stands unbroken to this day.

The story of the speed record and also that of the A 4 Pacific locomotives began in 1922 with the introduction of a new Pacific locomotive designed by H. N. Gresley, Locomotive Superintendent of the Great Northern Railway, a position he had held since 1911. Express trains on the G.N.R. up till that time were worked by Atlantic locomotives, built by the previous Locomotive Superintendent, Mr. H. A. Ivatt. Although excellent for the light trains, and slow journeys of their day, the increase of traffic and the introduction of heavier, faster trains, saw a need for locomotives of greater power.

The type that immediately suggested itself was the Pacific locomotive, which until then was a comparatively rare sight on British railway systems—the only examples being the G.W.R. 'Great Bear' built in 1908, and the Pacific locomotives built for the N.E.R. by Sir Vincent Raven in 1922. Both were unsuccessful as compared to locomotives of standard design, and the engine built by the L.N.E.R. proved to be something of a pathfinder.

The first engine was No. 1470 Class A.1 'Great Northern', which was an unqualified success, and was the first of 114 Pacific locomotives to be built to Gresley's designs for the L.N.E.R. The second A 1 Pacific No. 1471 was built three months later, and to substantiate his views, Gresley arranged for a special test train weighing a total of 610 tons to be run between Kings Cross and Grantham. The train took 122 minutes for the 105.45 miles—at that time considered very impressive. The success of this run resulted in ten more engines of the A 1 type being ordered that year, and the first, No. 1472 'Flying Scotsman', appeared in January, 1923.

The most powerful

The British Empire Exhibition of 1924, held to mark the recovery from the First World War, included exhibits from both the G.W.R., and the L.N.E.R., who showed No. 4472 'Flying Scotsman', polished and painted in a special livery. Standing adjacent was the G.W.R. locomotive 'Caerphilly Castle', one of the 'Star' class engines. This had an intriguing notice saying that the engine was 'The most powerful express passenger locomotive in Great Britain', and this naturally provoked a challenge from the L.N.E.R. to the G.W.R. to substantiate their claims. This in turn led to the locomotive exchanges of 1925, which although possibly intended as a

friendly interchange of knowledge, was treated by the general public as a notable sporting event. The routes which the competing locomotives were to run along were lined with enthusiastic crowds, who watched the progress with considerable interest. The first trial occurred on the G.W.R., on that most difficult of routes between Paddington and Portsmouth with the L.N.E.R. A 1 locomotive 'Victor Wild'. Although it performed well in spite of the soft Welsh coal and difficult gradients, it did not compare favourably to the performance of the G.W.R. locomotive No. 4074 'Caldicot Castle', which on a number of occasions, steamed into Plymouth Station considerably before the booked time.

Much to everyone's surprise the same happened over L.N.E.R. metals, when G.W.R. No. 4079 'Pendennis Castle', and L.N.E.R. No. 2545 'Diamond Jubilee' were pitted against each other. The outcome was a complete victory for the G.W.R., and surprisingly, the lessons that should have been learned as a result of the trials did not immediately succeed in bringing about any changes in the L.N.E.R. locomotive design policy. Gresley, however, did a short time later effect a change in the valve gear of the A 1 class locomotive 'Gay Crusader' which produced such startling changes in its performance that the remaining members of the class were similarly treated, resulting in the construction of the A 3 class of locomotives.

The first of these to appear was No. 2743 'Felstad' in August, 1928. Nine further locomotives were built between then and 1929, which is fortunate, for the early years of the 1930's saw an increase in train speeds in nearly every country of the world, and this, combined with a more speed-conscious public, had its effect upon the rivalry that existed between members of the 'Big Four'. As a result, an unofficial competition occurred between the L.M.S. and the L.N.E.R., each attempting to run the longest non-stopping train. Gresley designed a special corridor tender for working the 9.50 a.m. relief 'Flying Scotsman' non-stop over the 268·35 miles between Kings Cross and Newcastle. The L.M.S. were, in competition, operating their 'Royal Scot' train non-stop along the 236·25 miles between Euston and Carnforth. This was later extended to Carlisle when the 'Royal Scot' locomotive class were introduced.

Leaping forward—'The Flying Scotsman' starts out on the first non-stop run of the 1933 season



Broken Records

The crash of the 'Royal Scot' on the L.M.S. in 1931 began an investigation which brought home the dangers of smoke and steam obscuring the driver's view. Experimental work began on methods of avoiding this, and eventually locomotives No. 2747 'Coronach' and No. 2751 'Humourist' were fitted with experimental double blast pipes which ultimately became standard on all A 3 and A 4 locomotives.

The shape of the streamlining on the A 4 Pacifics resulted in several experimental designs, the last of which was fitted to No. 10,000, a 4-6-2-2 engine with a water tube boiler. This engine was unique in that it was the only Pacific locomotive in Britain built for compound operation, although the engine, generally speaking, was not successful and no more were built.

In 1932 the L.M.S. and L.N.E.R. abandoned their long standing agreement limiting the travelling times between London and Glasgow to 8¼ hours, first decided in the race to Aberdeen in 1895. In the first year of the accelerated services, the times achieved by the L.N.E.R. were reduced progressively to 7 hours by 1937.

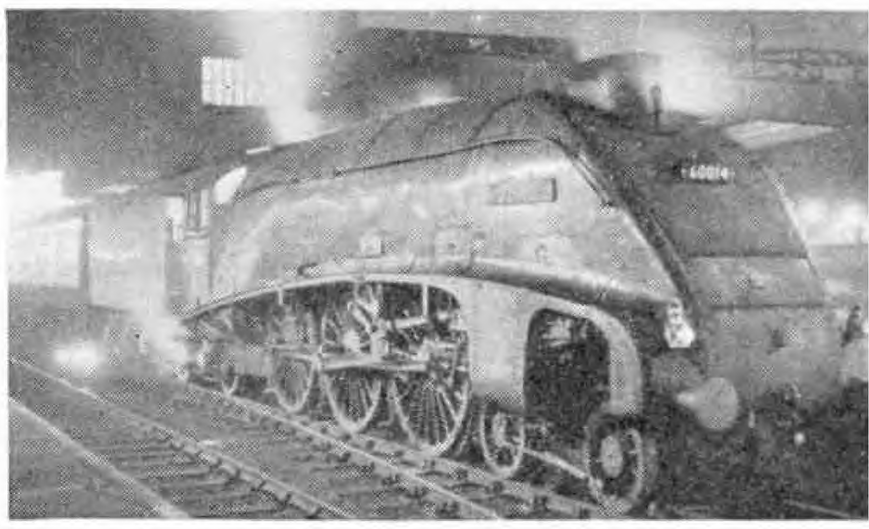
The very fast journey times in force on the Continent and in America convinced Gresley that similar results could be obtained in Britain with steam power, and a test train with No. 4472 'Flying Scotsman' with 147 tons behind was run to Leeds in the record time of 2 hours 31 minutes 56 seconds—comparable if not better than the times accomplished with diesel locomotives in America. On the basis of these results, the decision was taken to build a streamline train, and a second test trip was arranged with A 3 No. 2750 'Papyrus'. On the return journey the locomotive ran at top speed and a maximum of 108 m.p.h. was reached.

Basically the A 4 class of Pacific engines of which 'Mallard' is a member are similar, except in appearance, to the A 1 and A 3 types. The streamlining that was fitted to the A 4 Pacifics was intended to reduce the external wind resistance. It also, of course, had considerable publicity value.

The 'Silver Jubilee' trains introduced by the L.N.E.R. between London and Newcastle proved to be so popular that often prospective travellers had to be



Above: Freight too was hauled. This is 60025 'Falcon' leaving Hadley Wood North Tunnel in 1960. Below: Night scene at Kings Cross with 60014 'Silver Link' about to leave for Scotland



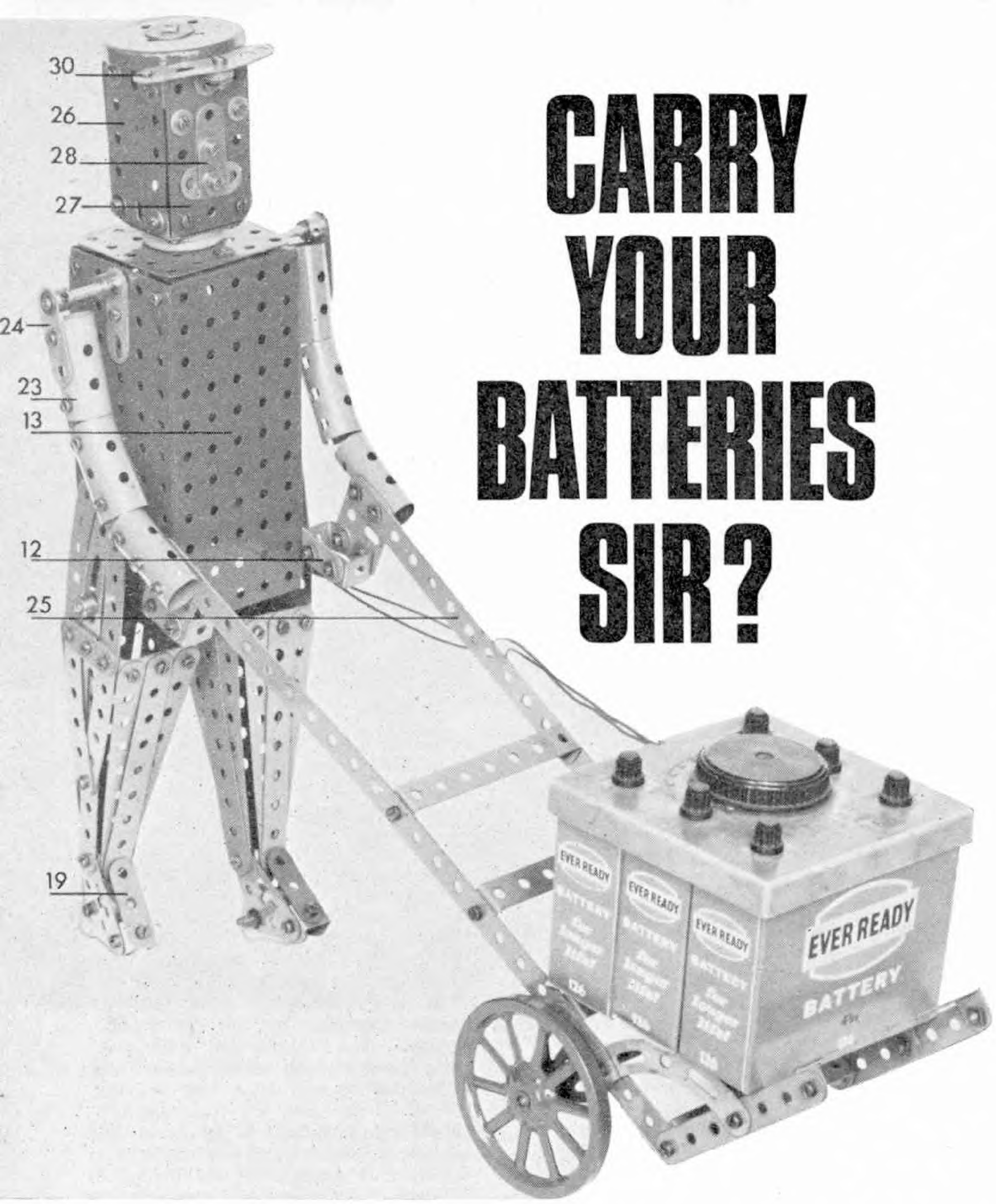
turned away if they had not booked their seats in advance. This train was often used for test runs, on which high speeds were invariably reached, and on August 27th, 1936, 'Silver Fox' achieved 113 m.p.h. A second train of the 'Silver Jubilee' type was introduced on the Coronation of King George VI and was called 'Coronation'. Five A 4 Pacifics were built for the train, all named after countries in the British Commonwealth and Empire. These were painted in garter blue, later to become standard on all A 4 Pacific engines. The 'Coronation' train provided Tyneside with an evening journey to London in addition to the morning 'Silver Jubilee', but the main purpose of its introduction was to bring the capitals of England and Scotland within the time of six hours. The inaugural trip of the 'Coronation' train on its return journey, was unofficially run with the idea of beating the L.M.S. record of 114 m.p.h. 'Dominion of Canada' was at the head of the train and after reaching Stoke, the locomotive was allowed to travel at speed down the Bank towards Peterborough. The maximum speed was 109½ m.p.h. 4½ m.p.h. below the record figure.

The most memorable of runs occurred on July 3rd, 1938, when 'Mallard', pulling a special train to test breaking powers, broke the world speed record. The train started a little north of Grantham and passed the station at 24 m.p.h. The following 2½ miles on a gradient of 1 in 200 were travelled at 59¾ m.p.h. This increased to 69 m.p.h., 1½ miles further on, and the 1½ miles to Stoke Box, also up a gradient of 1 in 200 was passed, and 74½ m.p.h. was reached at the summit. From mile post 100, at each mile, speeds were 87½, 96½, 104,

Continued on page 45

CARRY YOUR BATTERIES SIR?

'Spanner' builds a real live (almost) working walking porter. Why not make his brother —it's surprisingly easy!



WITH such an adaptable system as Meccano, it is possible to model all sorts of intricate structures and realistic movements. In the March 'M.M.', for example, we featured a novel Horse and Chariot, in which the Chariot was pulled along by the walking movement of the Horse. A similar movement is employed in the model described below which represents a Walking Porter!

Power for the model is obtained from an Emebo Motor that drives the legs through a quite simple gear arrangement. Three 4½ volt batteries (Ever Ready 126 or equivalent), attached to a Hornby Battery Controller, provide the current, and they are carried on the handcart. This is most important, as the weight of the batteries gives stability to the model, thus preventing it from overturning. To help in construction, I have split the building instructions into appropriate sections, as follows :

Body and drive

An Emebo Motor, carrying $\frac{7}{16}$ in. Pinion on its output shaft, is fixed to the inside of a 5½ in. by 2½ in. Flanged Plate 1 by Bolts 2. The flanges of this Plate are extended by two 5½ in. by 2½ in. Flat Plates 3 and 4. In mesh with the $\frac{7}{16}$ in. Pinion is a 60-teeth Gear Wheel 5 on a 3½ in. Rod 6, journalled in Plates 3 and 4. Also mounted on this Rod is a ½ in. Pinion 7 which, in turn, meshes with a 57-teeth Gear Wheel 8 on another 3½ in. Rod 9, held in place by a 1 in. Bush Wheel (Elektrikit part No. 518) at each end. Two Cranks 10 are bolted, one each, to Flat Plates 3 and 4 to serve as bearings for a 5½ in. Rod 11, which is fixed tightly in position. A 3½ in. Strip 12 is also fixed to Plates 3 and 4, as shown, and the front of the body is filled in by a second 5½ in. by 2½ in. Flanged Plate 13, using a Box Spanner to reach the Nuts.

The legs

Both legs are similarly built. Two 5½ in. Curved Strips 14, connected by a 1½ in. Strip 15, are bolted to the lugs of two 1½ in. by ½ in. Double Angle Strips. A 5½ in. Slotted Strip 16, extended by a 4½ in. Strip, is fixed to the centre of Strip 15. A 1½ in. Corner Bracket and two Double Brackets, arranged in a box shape, are bolted to the lower end of the 4½ in. Strip.

The inside leg is built up from three 4½ in. Strips 17, fixed to a 1½ in. Strip that is secured to the lugs of the 1½ in. by ½ in. Double Angle Strips. Their lower ends are brought together and are bolted, along with another 1½ in. Corner Bracket 18, to the other lugs of the above-mentioned Double Bracket.

Three 4½ in. Strips are bolted to each 1½ in. by ½ in. Double Angle Strip, their lower ends also being brought together

and fixed to the above Double Brackets. Corner Brackets 18 are connected at the front by a Double Bracket to which a 1½ in. Strip 19 is bolted. In addition, a shaped piece of erasing rubber is held between the Corner Brackets by a ½ in. Bolt to serve as a shoe.

A 4½ in. Rod 20 is now mounted in the bottom centre holes of the Flat Plates. On each end of this Rod is placed, in order, a Spring Clip, a Collar 21, a Washer, Slotted Strip 16, the Rod passing through the upper slot in the Strip, and another Collar 22. Slotted Strip 16 is then lock-nutted to the 1 in. Bush Wheel. The other leg is attached in the same way, but make quite sure that the Bolt locking it to the 1 in. Bush Wheel is diametrically opposite the corresponding Bolt in the first leg.

The arms

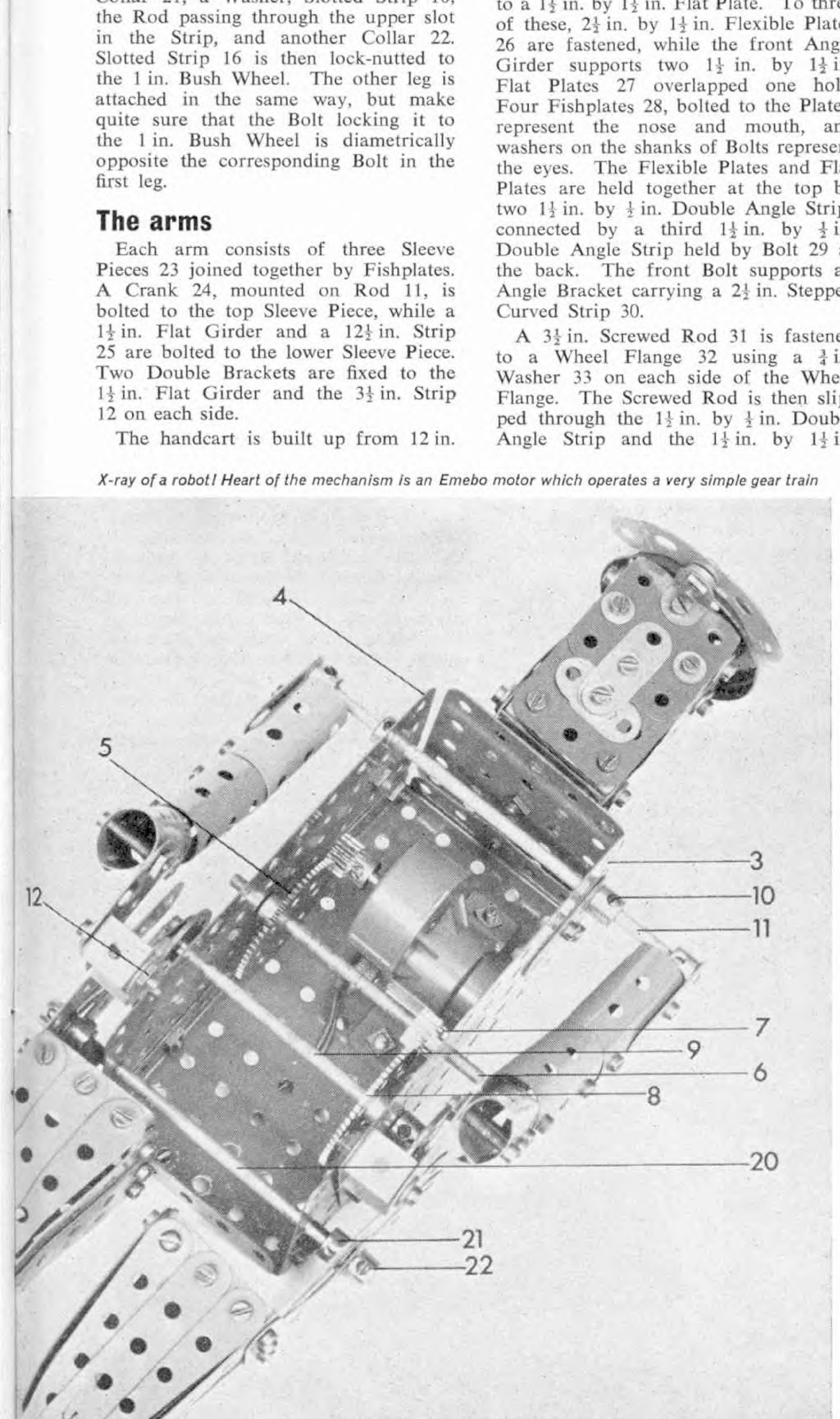
Each arm consists of three Sleeve Pieces 23 joined together by Fishplates. A Crank 24, mounted on Rod 11, is bolted to the top Sleeve Piece, while a 1½ in. Flat Girder and a 12½ in. Strip 25 are bolted to the lower Sleeve Piece. Two Double Brackets are fixed to the 1½ in. Flat Girder and the 3½ in. Strip 12 on each side.

The handcart is built up from 12 in. Strips 25, extended by 3½ in. Strips with 3 in. Stepped Curved Strips being used as bracers. Six 3½ in. by ½ in. Double Angle Strips join each side of the cart, while the axle, a 5 in. Rod, is journalled in Flat Trunnions bolted to Strips 25. Two spoked Wheels represent the road wheels.

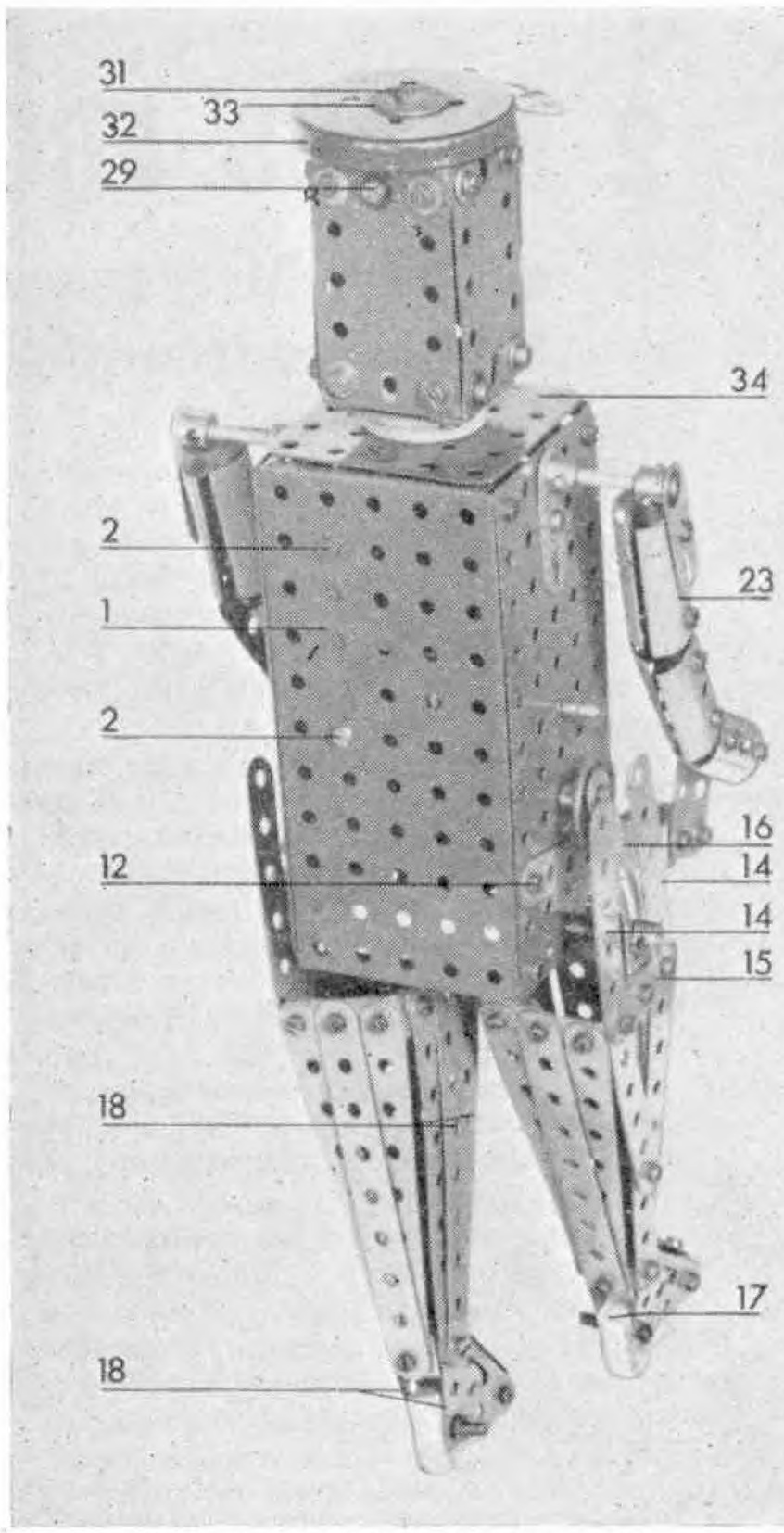
The head

Four 1½ in. Angle Girders are bolted to a 1½ in. by 1½ in. Flat Plate. To three of these, 2½ in. by 1½ in. Flexible Plates 26 are fastened, while the front Angle Girder supports two 1½ in. by 1½ in. Flat Plates 27 overlapped one hole. Four Fishplates 28, bolted to the Plates, represent the nose and mouth, and washers on the shanks of Bolts represent the eyes. The Flexible Plates and Flat Plates are held together at the top by two 1½ in. by ½ in. Double Angle Strips connected by a third 1½ in. by ½ in. Double Angle Strip held by Bolt 29 at the back. The front Bolt supports an Angle Bracket carrying a 2½ in. Stepped Curved Strip 30.

A 3½ in. Screwed Rod 31 is fastened to a Wheel Flange 32 using a ¾ in. Washer 33 on each side of the Wheel Flange. The Screwed Rod is then slipped through the 1½ in. by ½ in. Double Angle Strip and the 1½ in. by 1½ in. Flat Plate. Two 1 in. loose Pulley Wheels with Rubber Rings are now placed on the Rod before fastening a 2½ in. by 2½ in. Flat Plate 34 to the head. Two ⅜ in. Bolts with Nuts are secured in the centre holes of the upper flanges of the Flanged Plates 1 and 13, then Plate 24 is mounted on these Bolts and secured with two Nuts.



X-ray of a robot! Heart of the mechanism is an Emebo motor which operates a very simple gear train



Rubber soles too! Shaped pieces of erasing rubber are cut to act as shoes and to provide traction

Parts required

2 of No. 1	
20 of No. 2a	2 of No. 55
4 of No. 3	4 of No. 59
6 of No. 6a	4 of No. 62
8 of No. 10	2 of No. 70
10 of No. 11	1 of No. 72
1 of No. 12	3 of No. 74
4 of No. 9f	1 of No. 80a
1 of No. 14a	4 of No. 89
1 of No. 15	2 of No. 89a
1 of No. 15a	1 of No. 90a
2 of No. 16	2 of No. 103h
2 of No. 19a	6 of No. 111
2 of No. 22a	5 of No. 111a
2 of No. 26c	7 of No. 111c
2 of No. 27d	2 of No. 126a
2 of No. 35	4 of No. 133
128 of No. 37a	1 of No. 137
107 of No. 37b	2 of No. 155
33 of No. 38	6 of No. 163
2 of No. 38d	3 of No. 188
7 of No. 48	2 of No. 518
6 of No. 48b	1 Emebo Motor
2 of No. 52	

2 MECHS FROM 'SPANNER'

- **Heavy duty geared roller bearing**
- **Simple free-wheel unit**

BEFORE the last war, Meccano Limited produced a heavy duty Geared Roller Bearing as a complete item. This was an extremely useful, if rather expensive part, but unfortunately it was never reintroduced after the war, as the tools used in its manufacture were no longer in existence.

While agreeing that this is a regrettable state of affairs, I do not believe it to be the terrible blow to the Meccano system that many people maintain. Why? Simply because a reasonably serviceable heavy duty bearing can be built up from current standard parts—and probably at a fraction of the cost of a commercially manufactured example. The first item illustrated here is just such a composite bearing, and one which is often used by the Model-Building Department of Meccano Limited.

The bearing itself is, of course, the section between and including the two Flanged Rings, this being fixed on a suitable mounting, depending upon the model in which it is being fitted. For the purpose of the article, however, it has been attached to a strong base framework that we have found can often be incorporated as a complete unit in a model.

Framework

A square is built up from four 9½ in. Angle Girders 1, connected at each corner by a 4½ in. Angle Girder 2, at the same time bolting two Corner Gussets in place. A second square, obtained from another four 9½ in. Angle Girders 3, is bolted to the top of Girders 2, Corner Gussets again being added for strength. Girders 1 and 3 at opposite sides are connected by two 4½ in. Angle Girders 4 and these, in turn, are connected at the top and bottom by another two 9½ in. Angle Girders 5 and 6. Corner Gussets are positioned at the bottom.

Bolted between each Angle Girder 5 and 6, in the positions shown, are three 4½ in. Angle Girders 7 and 8, all being overlayed by 4½ in. Strips along one flange. Fixed between each pair of Girders 7 and 8 are two 2½ in. by 1 in. Double Angle Strips 9 and 10. A 2½ in. by 2½ in. Flat Plate 11 is bolted to the top of Strips 9.

Bearing unit

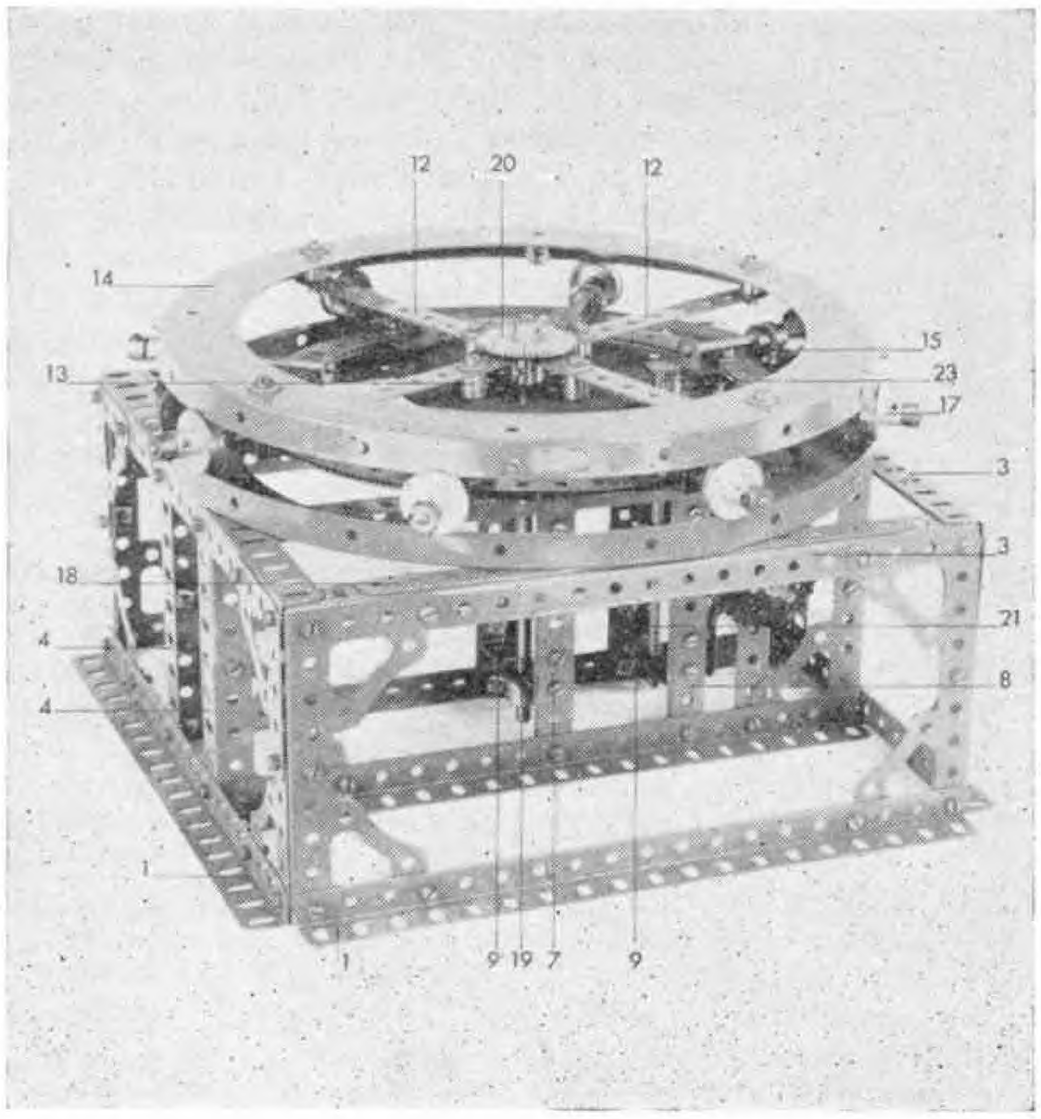
Two 9½ in. Strips 12, at right angles to each other, are secured to a 3½ in. Gear Wheel by means of Bolts screwed into four Threaded Bosses 13. A 9⅞ in. diameter Flanged Ring 14 is then fixed to the Strips, again using Threaded Bosses as shown.

Eight 1½ in. by ½ in. Double Angle Strips 15 are bolted, in equidistant positions, between two 7½ in. diameter Circular Strips 15. Held by Collars in each of these Double Angle Strips is a 3 in. Rod that carries a loose ¾ in. Flanged Wheel 17 held on the Rod by a Collar. A second 9⅞ in. Flanged Ring is bolted to Girders 3, at the same time fixing two 7½ in. Strips 18 to two of the Girders to provide anchoring points.

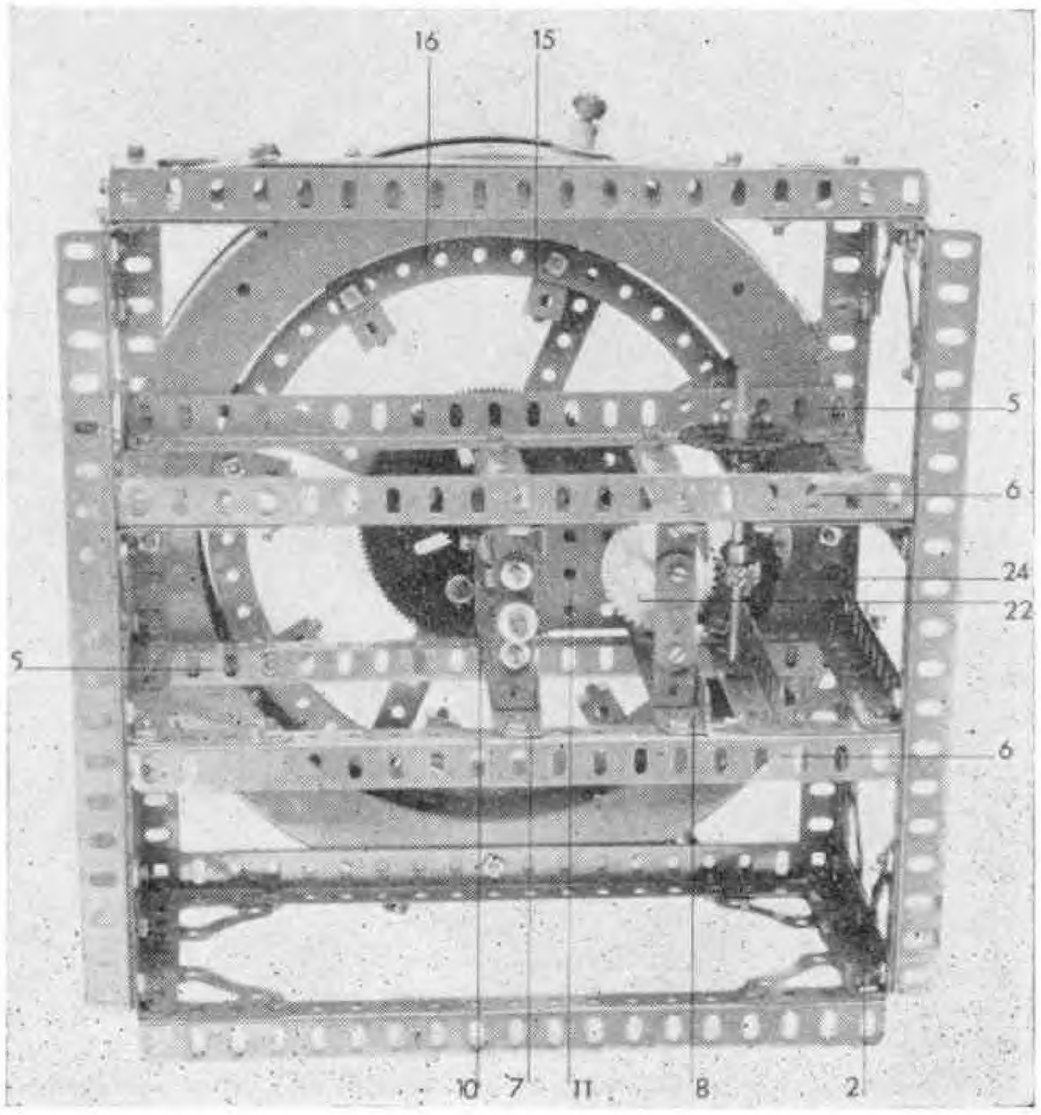
A 6½ in. Rod 19 is journalled in Flat Plate 11 and one of the Angle Strips 9 and 10, a 1½ in. Strip first being bolted to the underside of each Double Angle Strip to provide an extending bearing for the Rod. At this stage the Rod is loose in its bearings. The Circular Strip arrangement is now positioned with the flanges of Flanged Wheels 17 resting on the vertical flange of the lower Flanged Ring. Once in position, the upper flanged Ring and 3½ in. Gear construction is slipped on to Rod 19 with the vertical flanges of the Ring also resting on the flanges of Wheels 17. A 50-teeth Gear Wheel 20, fixed on the Rod, holds the arrangement in position while a Collar beneath the two Double Angle Strips 9 and 10 prevent the Rod from slipping out of its bearings.

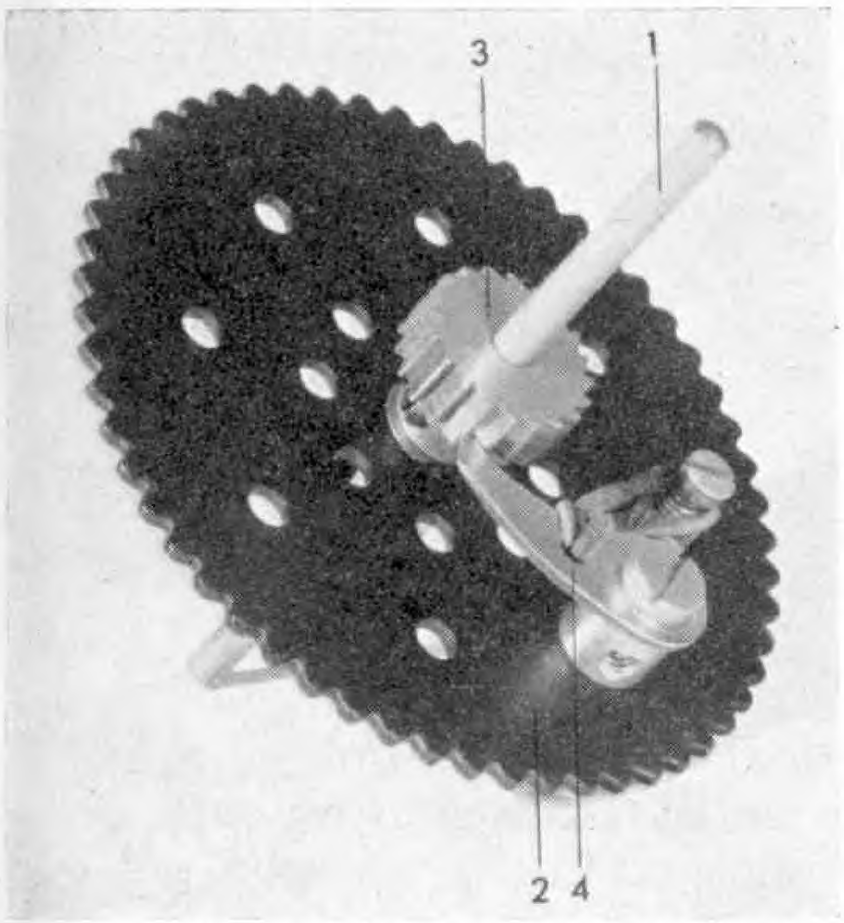
Journalled in Flat Plate 11 and the other two Double Angle Strips 9 and 10 is a 5 in. Rod 21, with three 1½ in. Strips first being bolted to the underside of both Double Angle Strips to provide extended bearings. Mounted on this Rod is a 1½ in. Helical Gear 22, a Collar and a ½ in. Pinion 23 with a ½ in. face, the latter being spaced from the Plate by several Washers. A ½ in. Helical Gear 24

This composite geared roller bearing can be built up entirely of Meccano standard parts



An underneath view of the bearing showing the supporting framework and drive mechanism





This simple free-wheel mechanism will prove invaluable when incorporated in many Meccano models

on another 5 in. Rod journalled in two of the vertical 4½ in. Angle Girders and held in place by Collars, meshes with Helical Gear 22. Three 3½ in. Strips are bolted to each of the 4½ in. Girders to provide extended bearings for the Rod on the ends of which are fixed 1½ in. Sprocket Wheels, which are driven by the Motor powering the model in which the bearing is being incorporated.

Readers may notice that the main centre shaft and corresponding collars are not standard Meccano parts. This is because the actual bearing illustrated was last used in a very large experimental model where a particularly strong centre-shaft was advisable. You, however, should find a standard Meccano Rod and Collars more than adequate for your requirements. I must stress, incidentally, that the above building instructions are for the complete unit shown in the pictures. You will be able to modify at least the framework and drive mechanism for your own purposes.

Parts required

2 of No. 1a	8 of No. 20b	29 of No. 59
2 of No. 1b	1 of No. 26a	8 of No. 64
4 of No. 2a	1 of No. 27	1 of No. 72
14 of No. 6a	1 of No. 27b	2 of No. 95a
12 of No. 8a	114 of No. 37a	20 of No. 108
14 of No. 9a	122 of No. 37b	2 of No. 145
1 of No. 14	24 of No. 38	2 of No. 167b
2 of No. 15	4 of No. 46	1 of No. 211a
8 of No. 16b	8 of No. 48	1 of No. 211b

Free-wheel mechanism

Free-wheel arrangements can prove almost a necessity at times. For example, if you have a model such as a fairground octopus on public display, you will find that admirers are tempted to 'help' the arms along by pushing them around. Normally, this could damage the driving mechanism but, with a free-wheel arrangement incorporated, the arms could be moved without fear of damage.

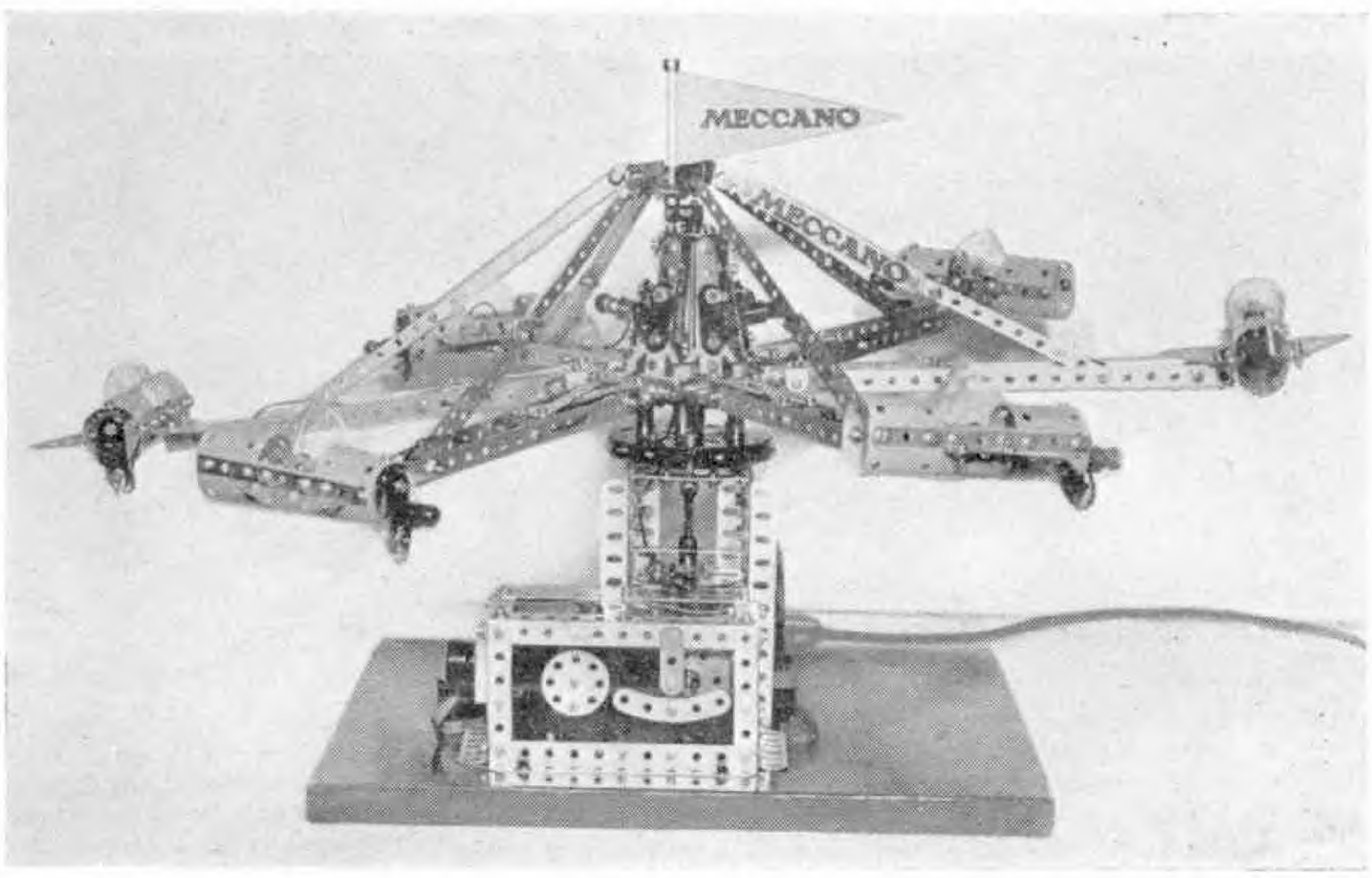
The mechanism illustrated on this page is amazingly simple in design, yet perfectly successful in operation. Rod 1 represents the driven shaft used in the particular construction in which the mechanism is included. Loosely mounted on this shaft is a 3 in. Sprocket Wheel 2 held in place by a Ratchet Wheel 3 and a Collar, the latter hidden in the illustration. The Ratchet Wheel must be tight against the Sprocket Wheel.

A Pawl with Boss 4 is mounted on a Pivot Bolt, which is fixed in one of the holes in the face of the Sprocket Wheel. Finally, a 2½ in. Driving Band is threaded through the small hole in the Pawl and the ends slipped over a ⅜ in. Bolt fixed in the Sprocket Wheel. This provides tension to keep the Pawl in contact with the Ratchet Wheel. The drive from the Motor is, of course, taken to the Sprocket Wheel via Sprocket Chain.

Parts required

1 of No. 27b	1 of No. 111c	1 of No. 148
2 of No. 37a	1 of No. 147	1 of No. 186
1 of No. 59		

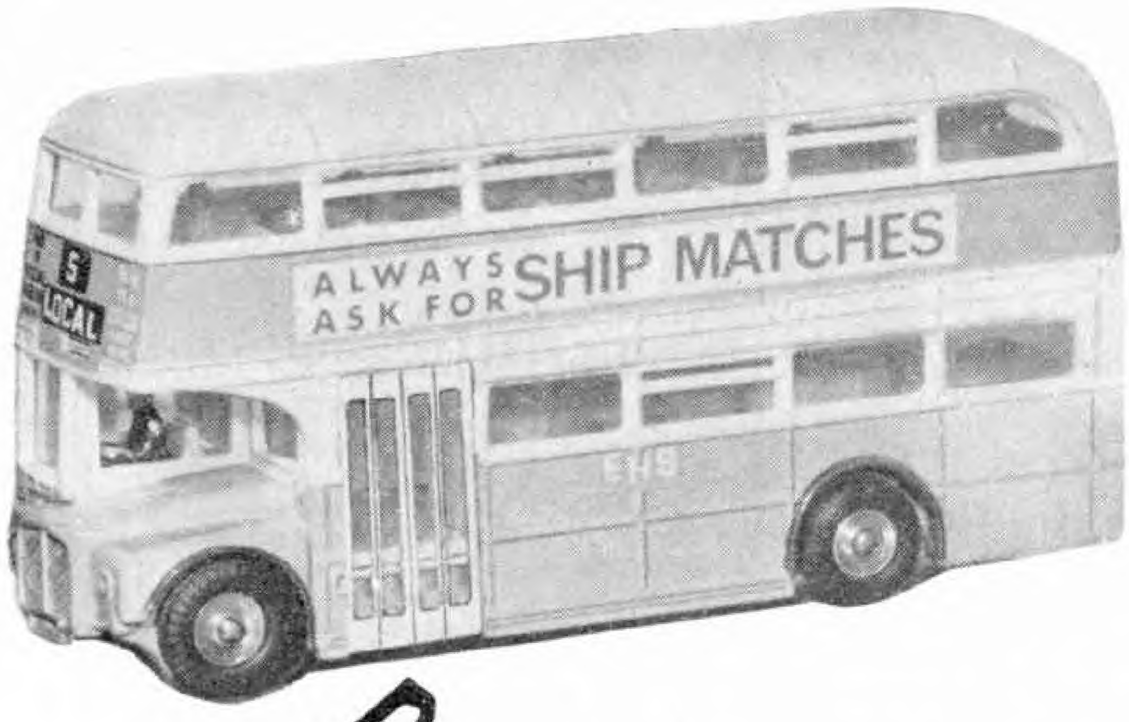
At the National Models Show, this fairground Octopus' aroused a lot of interest. It incorporates a free-wheel mechanism just like the one described above



Dinky Toy Winners

BELOW is a list of fifty names of readers whose entries for last month's 'Silhouette' competition were the first correct answers to be selected by the Editor. If your name appears in this list, then write on a postcard to: *Silhouette Prize, Meccano Magazine, Thomas Skinner & Co. Ltd., St. Alphage House, Fore Street, London, E.C.2.* and claim your FREE Vauxhall Viva. If your name does not appear in this list, even though you entered for the competition, don't be too disappointed—try again!

T. M. Allsop, York Road, Bridlington, Yorks. *G. Austin,* Holmwood Ave., Shenfield, Brentwood, Essex. *D Bellingham,* Widermere Road, Oatmers Cross, Tettenhall, Staffs. *S. Blair,* Willow Drive, Hemsworth, Nr. Pontefract, Yorks. *J. Blaszczak,* Uffington Rd., London S.E.27. *Brian Burgess,* Moulton Rd., Tivetshall, Norwich. *R. Carrick,* Kelk Villas, Welwick, Hull, E. Yorks. *A. W. Cheek,* Huntingdon Road, Thorpe Bay, Essex. *Andrew Cholerton* Blenheim Drive, Allestree, Derby. *J. N. Clarke,* Esher Grove, Mapperley Park, Nottingham. *Michael Clark,* Waterloo Ave., Leiston, Suffolk. *A. Collier,* Paget St., Grangetown, Cardiff. *M. Dean,* Tudor Ave., Worcester Park, Surrey. *V. Dodd,* Farnborough Rd., Clifton, Nottingham. *D. Eastwood,* Gipsy Lane, Kettering, Northants. *A. Ellis,* Manygates Lane, Sandal, Nr. Wakefield, Yorks. *Charles Ellson,* Hunters Grove, Kenton, Harrow, Middx. *D. P. Fox,* Bridle Rd., Shirley, Croydon, Surrey. *I. Gillett,* Lower Shelton Road, Marston, Beds. *R. Green,* Cyprus Rd., Mapperley Park, Nottingham. *A. Greenwood,* Rochester Rd., Lodge Moor, Sheffield 10, Yorks. *D. Harrison,* Woodlands Park Rd., Kings Norton, Birmingham, 30. *Gerald Holland,* Alum Rock Road, Alum Rock, Birmingham, 8. *J. Hunter,* High Field Road, Swinton, Mexborough, Yorks. *P. Jackson,* York House, Castles Estate, Bletchley, Bucks. *A. Jones,* Wheatfield Way, Cranbrook, Kent. *R. Jones,* Panteg, Penrhyncoch, Aberystwyth, Cards., Wales. *D. Keen,* Bidford Close, Solihull, Warwickshire. *M. Lisser,* William Rd., Hitchin, Herts. *J. Lorkin,* Lawrence Ave., New Malden. *J. Lovell,* Balmoral Rd., Longwell Green, Nr. Bristol. *R. Mansell,* Beacon Close, Amesbury, Wilts. *K. Marchant,* Harlequin Close, Radcliffe-on-Trent, Nottingham. *D. McCreery,* Aylestone St., Leicester. *A. Miles,* Pearsall Rd., Longwell Green, Nr. Bristol. *Lesek Modelski,* Mobberley Hall, Mobberley, Ches. *M. L. Owens,* King Edward Close, Rainhill, Liverpool. *D. Parrett,* Lord Williams Grammar School, Thame, Oxon. *A. Pell,* Henly Hostell, George St., Kettering. *M. Penny,* Seaton Rd., Yeovil, Somerset. *D. Root,* Fairbaun Road, Chesterton. *A. Scales,* Carrholm Crescent, Chapel Allerton, Leeds 2. *Trevor Stevenson,* Colworth Cottages, Sharnbrook, Bedford. *Roger Smith,* Roundwood, Shipley, Yorks. *T. Stubbs,* Islay Road, Dumfermline, Fife, Scotland. *R. Taylor,* Stanhope Rd., Longwell Green, Bristol. *G. Webb,* Booth Ave., Colchester Essex. *Paul Williams,* Tamar Drive, Keynsham, Bristol. *D. Wheeler,* Wesley Ave., Hounslow, Middx. *Stephen White,* Ringmore Rd., Walton-on-Thames, Surrey.







Everyone likes to own a 'different' model—one that's unique to his own collection. But to be really satisfactory, you have to learn a few 'tricks of the trade'. You'll pick up lots of useful tips from these pages, as *Chris Jelley* gets down to work with a saw and file to convert the standard Dinky Toys Routemaster into a 'Front Entrance Model'.

please use the front door

CUSTOMISATION of Dinky Toys, or the modification of standard Dinky Toys models to produce different versions of the originals, was first featured in the 'M.M.' in August this year, when the Aston Martin 'Hardtop' was produced from the D.B.5 Convertible. This proved so popular, that we felt encouraged to publish this month another similar article showing how the Routemaster London Bus, No. 289, can be turned into the front entrance version.

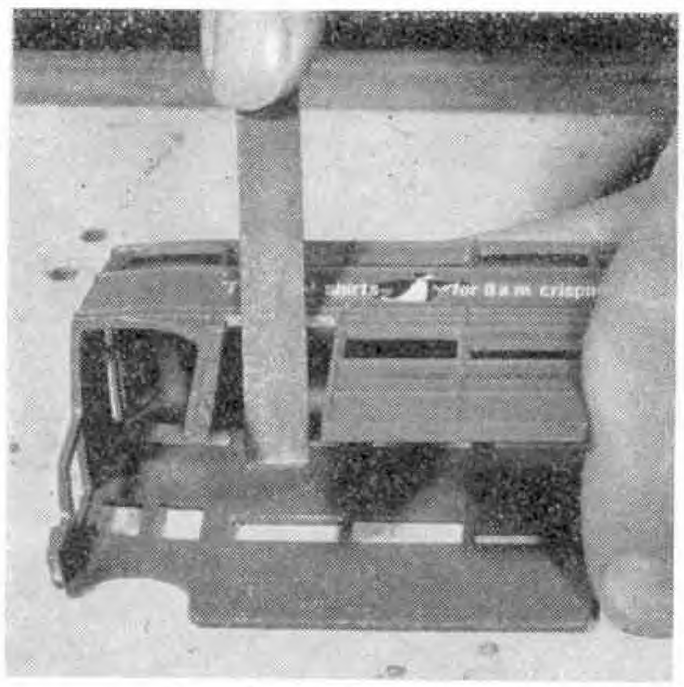
Credit for the original customisation job must go to **Mr. Alistair Gray,** of Glasgow, who kindly supplied me with a model he had altered and provided detailed notes on how to perform the alteration, which is a fairly lengthy but satisfying operation.

Tools required are a backsaw or razor saw (the X-acto one is ideal), a coarse file and, preferably, also a fine Swiss needle file with a flat surface, a rule, a modelling knife, a pair of fine nose pliers or tweezers, a hand brace and a $\frac{1}{16}$ in. drill. Extra materials needed are an opaque plastic sheet (Plastikard) of between 30 thou. and 60 thou. thickness; a sheet of similar clear plastic and a few scraps of thin balsa wood, together with an impact adhesive, such as 'Bostik' or 'Evostik'. A plastic solvent such as Mekpak is also desirable, although not essential. This bonds plastic together very strongly indeed and is quicker to use than ordinary plastic cement. It should be applied with a fine paintbrush.

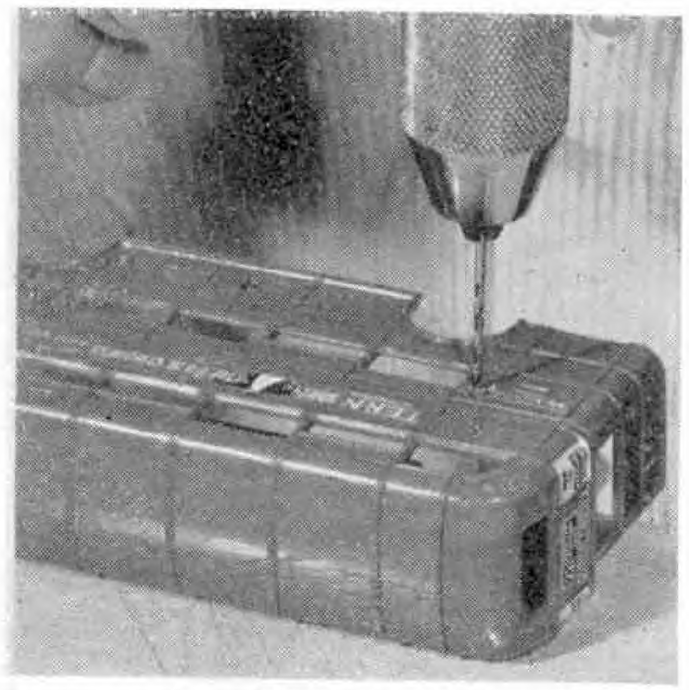
Before any modifications can be made, the bus must be dismantled by levering the small lug at the back of the model out of its locating hole. Once this has been done the base can be pulled downwards and out, allowing the lower window moulding, the upper seats, and then the upper window moulding to be removed. These should be put in a safe place out of the way whilst alterations are carried out on the body and chassis castings. I advise you to complete the body before moving on to the chassis.

The lower deck side panels, immediately beneath the near side front window, are cut out with the saw, as also is the horizontal window stay above these. The resulting opening is extended upwards approximately $\frac{1}{8}$ in. with the rough file, after which all the edges are 'cleaned up' with the needle file. Also remove the horizontal window stay in the front lower off-side window behind the cab windows, and smooth off the edges with the file.

A completely new window is now cut in the off-side of the body immediately behind the existing rearmost window. This is done by drilling a series of small holes with a $\frac{1}{16}$ in. drill, around the edge of the proposed window. If the holes are close enough together the surplus metal can quite easily be removed by breaking the thread of metal between the holes with a screwdriver and then filing the jagged edges to the final shape. It is advisable to place a block of wood



1 *After the model has been dismantled the body panels beneath the nearside lower front window are cut away, the horizontal window stay removed and the opening extended upwards approximately $\frac{1}{8}$ in. with a rough file*



2 *A new window is cut in the rear offside of the body by drilling a series of small holes in the casting around the edge of the proposed window and breaking out the surplus metal with a screwdriver*

behind the proposed window when breaking out the unwanted metal to avoid any danger of damaging the casting. The new window, extending backwards to the curved corner panel, is separated from the existing rear side window by a stay similar in width to the existing stays, i.e. approximately $\frac{1}{16}$ of an inch.

At the back of the bus, the left-hand vertical window stay is removed, and the curved portion of the rear entrance below the side route indicator, is filed off. The small nearside panel immediately behind the rear window is filed inwards from the entrance until only a standard-sized stay remains. The resulting space will later form part of the rear nearside window.

Chassis

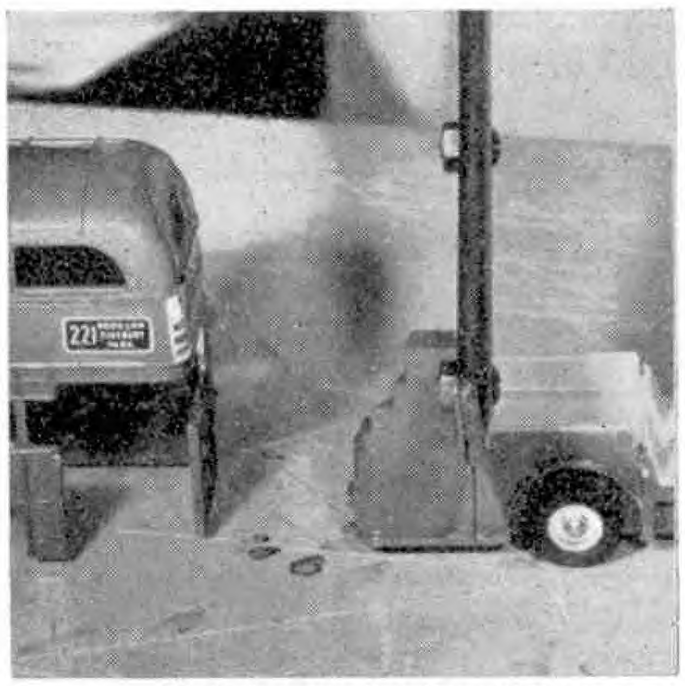
Basic work on the body casting having now been completed, the chassis castings can be dealt with. Cut away the complete stair unit from the bottom step upwards, leaving the bottom step, which incorporates the rear locating lug. The nearside only of the rear platform is then filed back until it is flush with the vertical pillar at the back of the left-hand rear seat. This pillar is itself sawn off level with the top of the rear seat.

At the front of the casting, the first four seats (two each side), are removed. This may sound a little difficult, but can be done by first sawing off the backs of the two front seats and then filing the remainder down, repeating this with the second two seats.

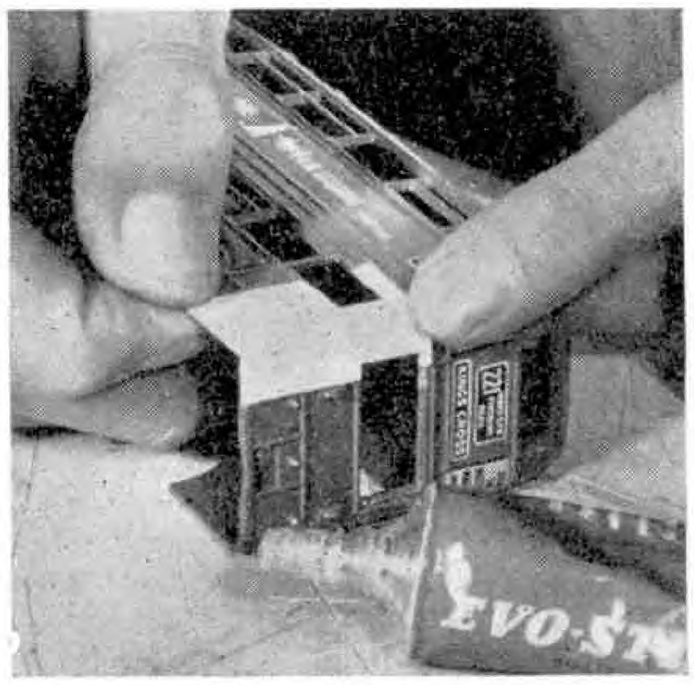
Rebuilding

Before starting to rebuild the model it is best to cut out from the plastic sheet, the various pieces that will be used in the reconstruction. When doing this it is only necessary to *score* the sheet with the modelling knife, and then break off the resulting pieces. Three pieces of Plastikard are needed, one $1\frac{1}{8}$ in. by $\frac{3}{4}$ in., another $1\frac{1}{8}$ in. by $\frac{5}{16}$ in., and the third $\frac{5}{8}$ in. by $\frac{1}{4}$ in. The first two pieces will be used to enclose the rear entrance, while the last is to fill-in the off-side front window to the rear of the driver's cab. In the case of the clear plastic, four pieces are required, the first $1\frac{3}{16}$ in. by $\frac{5}{8}$ in. in size, the second $\frac{7}{8}$ in. by $\frac{3}{8}$ in., the third $\frac{11}{16}$ in. by $\frac{1}{4}$ in., and the fourth $\frac{7}{8}$ in. by $\frac{3}{8}$ in. The first will serve as the new front entrance doors, the second as a draught excluding panel immediately inside the front entrance, the third as the new near-side rear window and the fourth as the lower back window. When cutting the plastic pieces it is advisable to make them slightly oversize, so that they can be shaped exactly with the file.

Once the various plastic sections have been cut, the $1\frac{1}{8}$ in. by $\frac{3}{4}$ in. piece is positioned over the appropriate part of the rear entrance and the outline of the new near-side rear window marked on it. The window is then carefully cut out. This manoeuvre is repeated in the case of the rear window, using the $1\frac{1}{8}$ in. by $\frac{5}{16}$ in. plastic. The two pieces are then glued



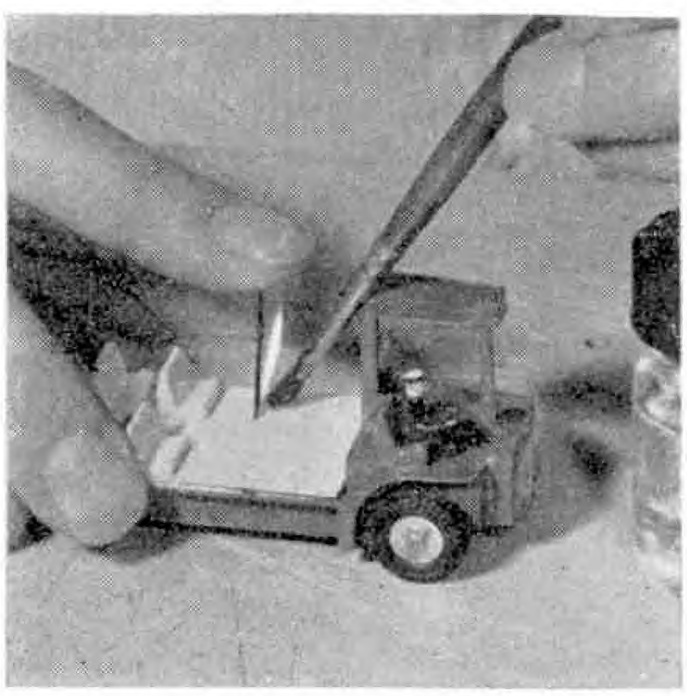
3 *First step in alteration of the chassis casting is to remove the stair unit from the bottom step upwards. The bottom step must remain as it incorporates the rear locating lug*



4 *The rear entrance is enclosed by opaque plastic (Plastikard), cut to shape and glued into position using one of the popular impact adhesives, such as Evo-Stik or Bostik 1*



5 *Once all alterations have been made to the chassis casting, the space previously occupied by the four front seats is covered by a sheet of Plastikard and the rear platform is built-up, with scraps of balsa wood to the level of the bottom step*



6 *A sheet of clear plastic $\frac{7}{8}$ in. × $\frac{3}{8}$ in., is glued in position to represent a draught excluding screen. If available, a plastic solvent should be used for this operation*

together at right angles to each other and allowed to dry. While they are drying take the $\frac{5}{8}$ in. by $\frac{1}{4}$ in. piece of plastic and fill in the off-side lower front window behind the cab, using the contact adhesive.

Moving on to the $1\frac{3}{16}$ in. by $\frac{5}{8}$ in. clear plastic; four strips of Sellotape 1 in. long by 2 mm. wide are stuck in position at $\frac{1}{16}$ in. intervals to act as masking tape while the door is painted. The Sellotape is later peeled off, leaving four clear door panels which are edged in black with three vertical black lines, one between each pair of door panels, to represent the panel edges. It is not advisable to paint the door at this stage, but having positioned the Sellotape, the door is fixed in place, again using the contact adhesive.

Turning to the base casting, build up the rear platform with scraps of balsa wood to the level of the bottom step, then overlay the whole platform with a piece of plastic sheet to bring the platform up to the level of the inside floor of the bus. The space left by the four front seats can also be covered by a sheet of plastic $1\frac{3}{16}$ in. by $\frac{15}{16}$ in. in size. A small piece of plastic, similar in size and shape to the remaining part of the vertical pillar at the back of the left-hand rear seat, is glued to the back of the right-hand rear seat. Finally, fit rear and new windows made with clear plastic.

Reassembly can now begin after first carefully cutting the back out of the lower window moulding. The panel is positioned so that it will lie immediately behind the front doors when the body is in place. Take this moulding and lower it carefully on to the chassis casting until it rests on the draught excluding screen to which it should be glued. Now fit the upper window and seat mouldings in place, and then rejoin the two castings, leaving off the vertical handrail.

This completes the customisation, but it will almost certainly be necessary to repaint the model. You can, of course, restore the original finish, but my own opinion is that now would be a good time to provide your own colour scheme, as was done by Mr. Gray. You could, for example, design a brand new colour scheme yourself, or perhaps reproduce the livery of your local bus company. Whatever you decide, I recommend the use of Humbrol plastic enamel which is obtainable from most model shops.

Next month I shall again be describing the new additions to the Dinky Toys range.

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WANTS

• Dinky model of 1948 Morris Oxford. State price.—Cope, St. Michaels, Bolton-le-Sands, near Carnforth, Lancs.

• Dinky aircraft, pre-war and post-war, any condition.—Dufton, 9 Rue Dareau, Paris 14, France.

• Instruction Manual, English or French Edition of early twenties covering sets one to six and also containing some special models, including Loom.—Please make offer to: Michaux, 30 Avenue Krieg, 1208 Geneve, Switzerland.

• Private collector urgently requires M.M.'s Feb. 1929; July, Sept. 1927; Jan. 1926; Jan., Feb., June, Oct., Nov. 1925. If unable separate, prepared buy whole year. Also 10 sets or larger in cabinet, 167 geared roller bearing, any M.M.'s earlier than 1921. All must be excellent condition. Prepared pay very high prices. Have for sale or prefer exchange, bound volume M.M. 1924, July 1925.—Stephenson, Stoneycroft, Station Road, Earl Shilton, Leicestershire. Telephone Hinckley 3234, daytime; Earl Shilton 2049 after 7 p.m.

• Pre-war M.M.'s. Particularly 1916-1922, bound copies any years, manuals, the book Frank Hornby—The Boy Who Made A Million! Obsolete parts. Originals only. — 50 Blundell Avenue, Horley, Surrey.

• Pre-war Dinky Trains and Tootsietoy cars.—Gilmour, 16 Great Lawn, Ongar, Essex.

• Pre-war trains and other toys or relevant data sought by enthusiast. — Butler-Edwards, 1 Chesham Crescent, S.E.20.

• Pre-war O gauge, electric or clockwork.—Robinson, 3 Dennis Parade, London, N.14.

• Obsolete Dinky toys, etc., highest prices, single or collections.—Pinnock, 6 Stream Farm Close, Lower Bourne, Farnham, Surrey.

• Wooden Cabinet or Box for Meccano Set, to: S. H. Rice, 33 Park Road, Bromley, Kent.

• Father wishes to obtain pre-war Hornby Steam Launch, any reasonable condition.—Archer, 12 Ribby Avenue, Wrea Green, Preston, Lancs.

• Corgi Matchbox, Spot-on, Obsolete Dinky Toys and similar scale models.—Please state price and condition.—Edwards, 1101 Matterhorn, Mobile, Alabama, U.S.A.

• Obsolete Dinky Toys required.—Price and particulars: Michael Burden, Norwell, Newark, Notts.

• Good looking girl pen-pal, age 13-14, anywhere in world.—Apply, with photograph: Christopher Tatchell, Holly Bank, Free Green Lane, Lower Peover, near Knutsford, Cheshire.

SALES

• "M.M.s", June 1957-February 1964 (one missing); perfect condition; 50/- post free.—N. T. Bundell, 18 The Looms, Parkgate, Wirral, Cheshire.

• 27 Superman Family Magazines, cost over 20/-, most mint condition; offers.—J.J., 5 Laxton Road, Liverpool, 25.

• Meccano Magazines, December 1954-December 1961 (5 missing); good condition; £3 (o.n.o.).—Carson, 10 Blackwood Ave., Woolton, Liverpool.

• Cigarette cards special. 100 assorted 2s. 6d., 200 4s. 6d. Albums 2/-, postage 6d.—"J.J.", 5 Laxton Road, Liverpool 25, Lancs.

• M.M.'s 1956-1960 inclusive, complete. Most in good condition; 14 odd copies also, 35/-. C. H. Towns, 54 Henderland Road, Bearsden, Glasgow.

• Large accumulation M.M.'s, Railway Magazine, Trains Illustrated, Hobbies Weekly, Do-it-Yourself, National Photographic, Wide World; many soccer, athletics, general sports magazines. 10,000 to clear, reasonable.—E. Jones, 43 Dundonald Road, Colwyn Bay, Denbs.

• Large quantity "OO" 3-rail Track, Sell whole or part. S.A.E. list.—D. Anderson, 7 Oakdale Road, Tunbridge Wells, Kent.

• M.M.'s, January 1956-December 1960; January-December 1962; various copies 1961, 1963. 45/- lot (post free).—12 Wrottesley Road, Tettenhall, Staffs. Telephone Wolverhampton 52788.

• Selection Hornby-Dublo 2-rail stock Airfix soldiers, toys, books, Meccano Magazines, watch repairing accessories. S.A.E. for lists. — Vick, 13 Badshot Lea Road, Farnham, Surrey.

• Bargain lot railway photos, annuals, books, pictures, etc., only £3.—Mackenzie, 1 Jane Terrace, Abbeyhill, Edinburgh 7.

• Look & Learn Magazines, guitar, Dinky Toys, S.A.E.—Details: M. Coles, 22 Greenway Road, Taunton, Somerset.

• For Sale: 0-6-2 Tank locomotive and electrically operated left hand points (both 3-rail).—Contact: S. W. Whiteford, Shandwick Mains, Nigg Station, Tain, Ross-shire, Scotland.

• Br. Cols. Israel foreign, wants invited.—Samuel, 15 Queenshill Avenue, Leeds 17.

• Modern railways, Nov. 1961-Jan. 1965, Flying Scotsman, Historic Locomotive Pocketbook, Diesel Locomotives, British Railways Headcodes, 70s.; plus over 450 good/rare stamps, 30s.—S.A.E. to: J. S. Elsby, 25 Chevrons Road, Shotton, near Chester.

• Meccano, 1914. Instruction book No. 1-6, 1926 Instruction Book No. 1-7, 1933 American Standard Mechanisms Manual, No. 132, Flywheel, Meccano Super Universal Design Maker Instructions, ask for wonderful specimen samples. Meccano Carpet Designs Maker. Old Super Model Leaflets. Other pre-war literature.—Andreas Konkoly, Budapest, XIII. Katona J.u.28. Hungary.

• Hornby clockwork engines, trucks, large radius rails, carriages.—John Caswell, 42 Ballycairn Road, Coleraine, N. Ireland.

• Meccano Magazines, February 1960-December 1964, £2 o.n.o., Stamp Monthly November 1963-August 1965, one missing, 10s., all good condition.—Fenton, 206 Errwood Road, Manchester 19.

• Old Dinkies, some pre-war, sell or exchange. S.A.E.—John Corlett, 45 Blenheim Road, North Harrow, Middlesex.

• M.M.'s, March 1956-December 1962. Air Pictorials, June 1962-November 1964. Offers.—D. Grant, 19 Cairnview Crescent, Aberdeen.

• Magic! Grow an underwater chemical garden while you watch. Beautiful, fascinating. Ample material, 4s. 11d.—Wills, 189 Woodlands Park, Almondsbury, Bristol.

• Meccano Mags., from 1947-1960, almost complete good condition. What offers? Excluding postage.—Coles, 41 Church St., Maiden Bradley, Warminster, Wiltshire.

• No. 2 Special Aeroplane outfit, reasonable condition, offers.—Ford, 37 Elm Mall Drive, Liverpool.

• For Sale: Dinky toys in excellent condition, also 25 pounds worth of Scalextric for £15. Write first for either item with S.A.E.—B. E. Whitehouse, 35 Stafford Avenue, New Costessey, Norwich. NOR-39.K.

• M.M.'s 1956-1962, half-price. Also "Aquarists" magazines, 1961-1962, half-price. — R. Yates, Watery Lane, Corley Moor, Coventry.

• Large Hornby Dublo two-rail train set, as new. Two locos, rolling stock, many other accessories. For details: Jones, Redmire, Leyburn, Yorks.

• Tri-ang OO-track, 70 ft.; loco, railcar. Electric Hornby Dublo. S.A.E.—For details: Jackman, 58 Winchester Rd., Andover, Hants.

• Dinky and Corgi Models, many obsolete. S.A.E. for list.—A. Mitchell, 90 Norman Crescent, Pinner, Middlesex.

SWOPS

• Small number pre-war Dinkys, especially ships, for exchange similar. List your doubles and wants. Salter, "The Grotto", Lower Basildon, Reading, Berks.

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Classified Advts. continued on page 47

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STAMPS news

by F.E.Metcalfe

African stamps

Quite recently I received a letter from a father, who stated that he had always been interested in Commonwealth, or Empire stamps, as he called them, and hoped to get his two sons similarly keen. As countries were turning out many more stamps in these days, he felt that to go in for them all would be far too big a task, so that meant cutting out some countries. He wanted my opinion as to whether I thought that the issues of African members of the Commonwealth would be a good selection, not only for the designs themselves, but from an investment point of view as well. Most of his sons' pocket money would be spent on the hobby (poor chaps) and naturally they did not want to throw it away.

At this time of the year many enthusiasts take up their collections again, with some considering new fields, and it might be worth mentioning what I said in reply to my correspondent.



First of all, I told him that he could not do better than go in for the stamps of South Africa itself (not in the Commonwealth but always accepted as such by collectors, and even in Commonwealth catalogues) for here is a postal administration which is second to none in its attitude of giving collectors a fair deal, never issuing a stamp solely with the object of tapping collectors' pockets. Another country in that part of the world is South West Africa (quite unfairly neglected) which is worth taking up. Then there are the British Protectorates (Basutoland, Bechuanaland and Swaziland) and Rhodesia. There you have six countries which make a group well worth the attention of any collector. But when we go further north it's a different proposition altogether and my advice would be to leave them alone. All the countries mentioned, and many more, of course, for all the Commonwealth is dealt with, will be found in the Commonwealth QEII Catalogue and a new edition (the 12th) is out October 15th.

The Simplified

Here is another catalogue I must refer to, for a new edition of Gibbons Simplified is just out, and this covers the whole world. Although it costs 40s. it is really wonderful value, for it is a huge book, and lists all the world stamps which have been officially issued since the penny black' first appeared. The cost may be a bit too much for a young collector, but I know of several families who use one 'Simplified' between them, and they have tremendous fun, all collecting. Why not try it?

The Far Pacific

There was a time, not so very long ago at that, when Commonwealth issues, of the Pacific, were not very popular. But all that is now very much a thing of the past. The possible exception is New Hebrides which, sharing as it does its stamps with France, still remains a slow seller with British collectors. So the new definitive issue for the Gilbert and Ellice Islands, was certain to be a winner and it is proving to be just that. This wonderful set, issued on August 16th, was designed by the well known artist, Mr. V. Whiteley, who adapted the drawings of a local lady—Mrs. M. Barback. The designs are simple, depicting various native customs, but when a set is mounted in your album, a fine page will be the result. It is worth noting that these stamps will only have a life of a few months, for next February, in line with Australia, whose currency parity they follow, the stamps will be changed; for G. and E. is going decimal. The full set goes up to £1 (16s. sterling), but a set up to a shilling has nine values, and even with these you can still make a nice album page. The interesting designs will attract collector and non-collector alike.



"Traffic Lights"

I have previously mentioned those dots which you see on the margins of G.B. special issues today and which have been dubbed 'traffic lights' by collectors, but I am being continually asked what they stand for, so let me explain that they are to enable checkers to see at a glance, if all the colours



which go to make up the design, are printed. Previously, many stamps slipped by with a colour missing, and however much collectors may like these varieties, the authorities, particularly the printers themselves, really detest them.

So popular are blocks of stamps showing these check dots, that a full list of them has been included in the latest edition of the Commonwealth QEII Catalogue.

Tip of the month

The Crown Agents have recently taken over the agency for new stamps of Ethiopia and this has resulted in a greatly increased demand for the issues of that interesting country. If you want a change and feel like going in for the stamps of a foreign, and certainly friendly country, you might consider the issues of the land of the Lion of Judah. If you do so decide, nip along to the local reference library and learn about the fascinating country you are taking up.



Continued from page 37

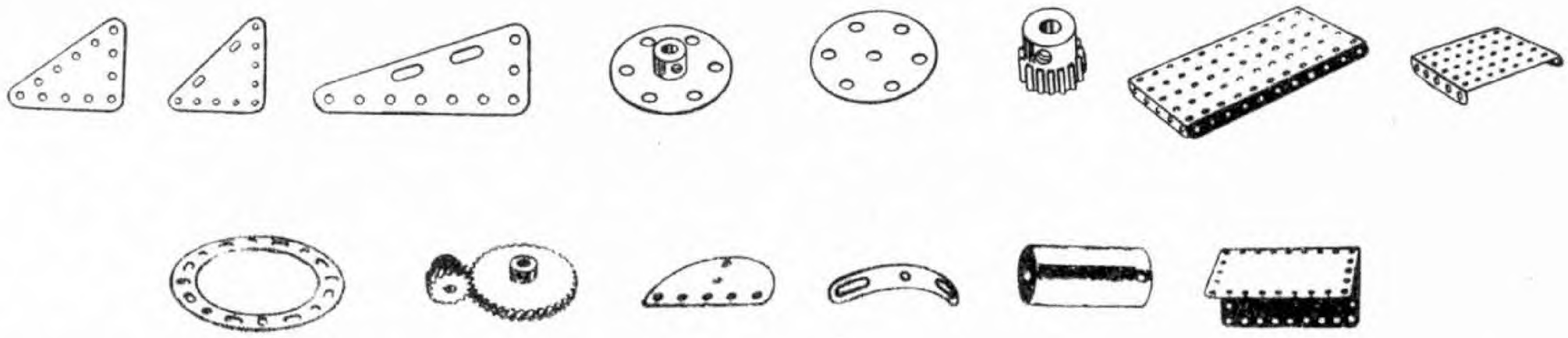
107, 111½, 116, 119 at mile post 93, and then every ½ mile, 120¾, 122½, 123, 124¼, 125, and a maximum for a short distance of 126 m.p.h. This broke all existing records, and made 'Mallard' one of the world's most famous engines.

The A 4 locomotive 'Silver Link', another of the A 4 class, was the first of the streamlined Pacifics to emerge from Doncaster, and was immediately placed in charge of the 'Silver Jubilee', five days a week, a total mileage each day of 464 miles, at an average speed of 70·4 m.p.h.—another unparalleled achievement in locomotive performance anywhere. The class of locomotives was also used at a later date for pulling very heavy trains. During the War 'Silver Link' was occasionally required to pull trains of as heavy as 850 tons, 25 bogie coaches.

In 1948, locomotive trials, of all the Pacific locomotives then available of later design, the Gresley A 4's Nos. 60022, 60033 and 60034 were selected to represent the L.N.E.R., a fitting end, and a tribute to Sir Nigel Gresley.

You can still see 'Mallard'—she is preserved in the Museum of British Transport, Clapham, along with a host of equally important milestones of railway history.

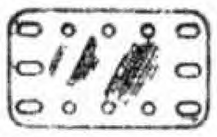
Mike Rickett

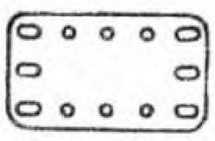


Dealers who specialise in Meccano spare parts

Listed below are some of the dealers who sell Meccano accessories and spare parts. This is intended to aid enthusiasts—and there are many of them—who constantly require additional spare parts for their Sets. All dealers can, of course, order Meccano spare parts for their customers, but those listed here are among our spare part specialists.

C. G. MARSHALL
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SALISBURY
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Telephone: Winton 309

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Telephone: 3420

H. SALANSON & CO. LTD.
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BRISTOL 1
Telephone: 2-6185

LUCAS'S (Hobbies) LTD.
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LIVERPOOL 1
Telephone: Royal 7562

LESLIE BROWN
Super Toy and Model Store
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The hunting of the hunter—from page 20

Spee safe harbour five days: long enough for the arrival of reinforcements, now racing to close the trap. Next day battleship *Cumberland* joined the hunters outside the Plate. Then carrier *Ark Royal*. The odds against *Spee* were overwhelming.

Uruguay was friendly to Britain. But she refused to be pushed by either side. She would inspect *Spee*'s damage — and decide—by law. Two days passed. Uruguayan engineers examined *Spee*. Langsdorff pressed, courteously, for 30 days. The British, for five. On December 15th the President issued a decree. And the world was thunderstruck. *Spee* must leave Montevideo — IN 72 HOURS. Deadline: 8 p.m., December 17th.

Langdorff's position was agonising. Seventy-two hours was not enough to make *Spee* seaworthy. If he went out to fight the overwhelming forces now ranged out at sea against him, *Spee* faced inevitable capture. If she remained, she would be interned—and perhaps handed over to Britain. He conferred with his officers and by radio with Berlin. What would he do Make a dash to escape by night? Fight to the death? No one knew. Deadline approached. Vast crowds lined the harbour. The capital was electric.

On the 17th, *Graf Spee* lay at anchor. Morning: Langsdorff went ashore, talked to Uruguayan authorities again. Then returned to his ship.

Evening. An hour to go. *Spee*'s entire crew were aboard. Smoke—from her funnels! She was going to move out! The watching thousands were hushed. Radio and television crews intent. The tension was unendurable. Two minutes. One. The great ship lay silent. Then, her hawsers were raised. Slowly she began to make way. A city, a world, held their breath as she moved down the river, out towards open sea. Then she stopped. Sunset flaming her topworks, she was motionless. What was happening? Boats lowered from her sides. Her crew were leaving! Minutes passed. A sudden, appalling light smote the harbour, the faces of stunned, incredulous thousands. Seconds later, across four miles of water, a deep and terrible thunderclap hammered the shore. *Graf Spee*, riddled with time-bombs, rather than capture, was blowing herself to death. Explosion after explosion racked her hull.

When the British ships heard, their captains saluted. On shore, people wept. At length, the explosions ceased. The proud battleship lay twisted, blackened. Great fires roared through her. Oily smoke rolled skyward. It was over.

Next morning, covered in *Spee*'s battle-flag, Captain Langsdorff was found. Shot through the temple. He had chosen to die alone with his ship, after saying goodbye to his crew, for the honour of his Navy.

Now, 25 years later, veterans of both sides, from *Graf Spee, Achilles, Ajax* and *Exeter*, still meet to re-live a mighty encounter: of men, of war, and the sea.

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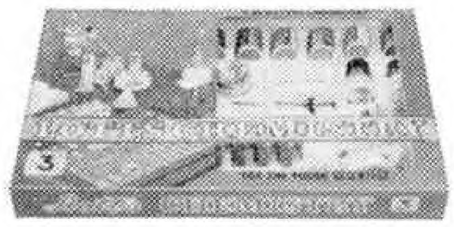
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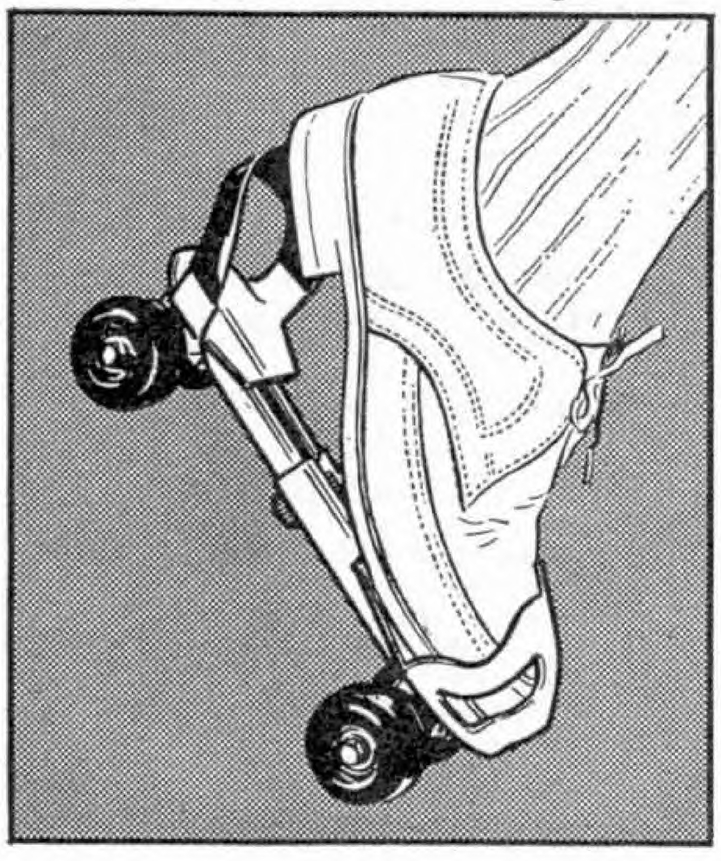


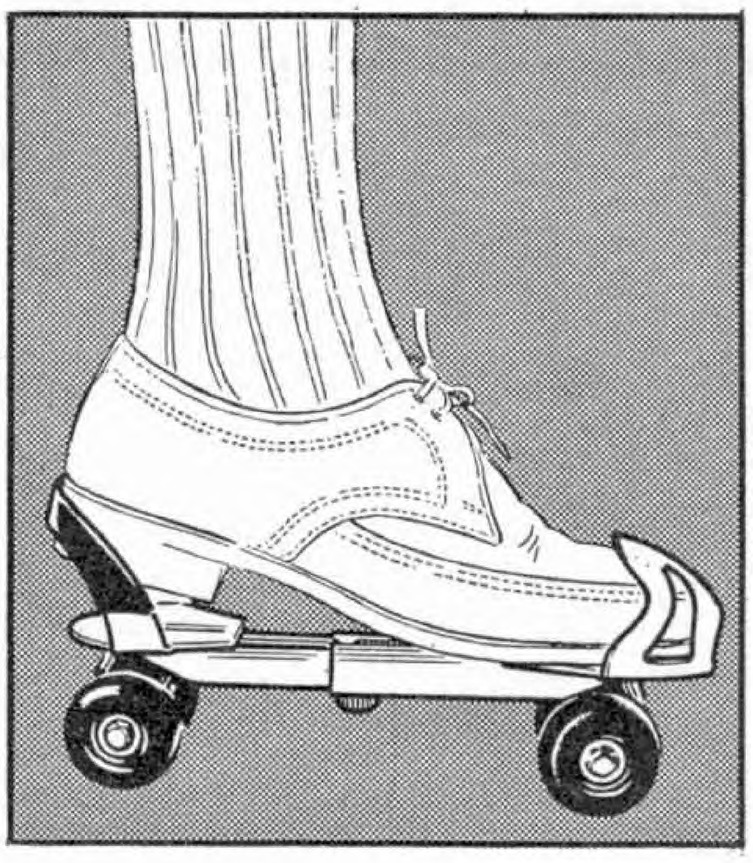
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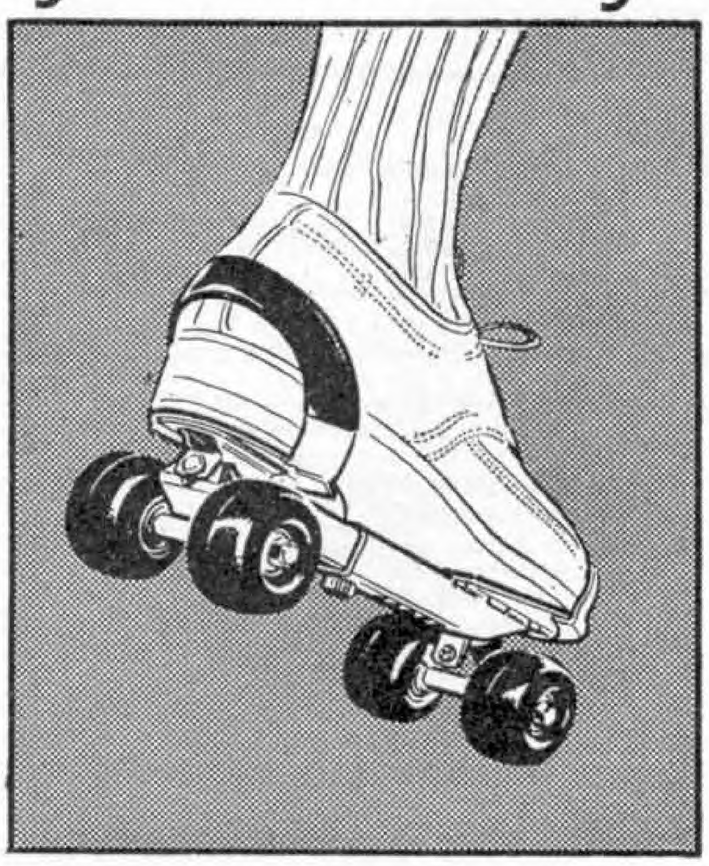
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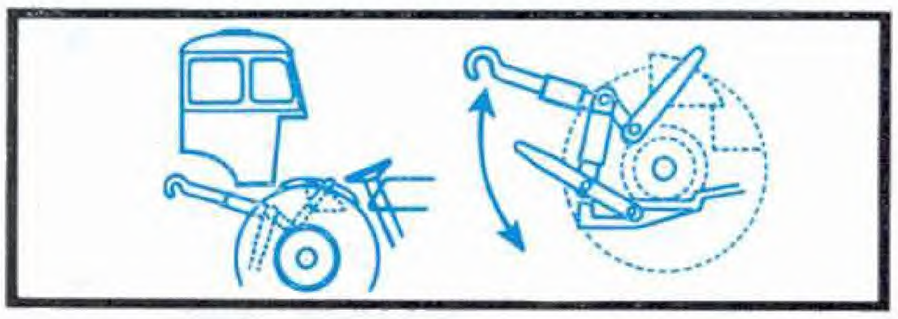


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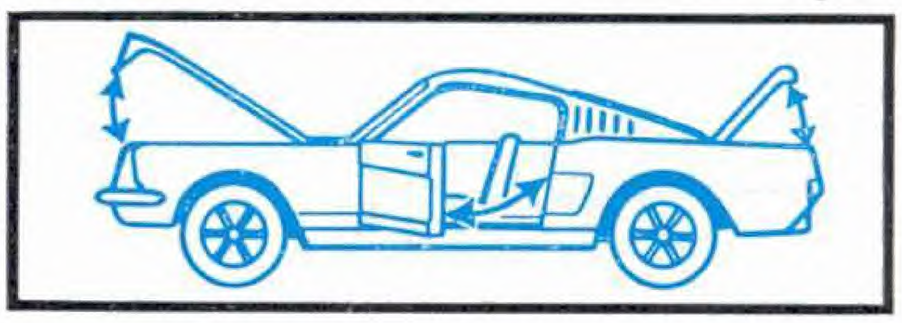
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